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LECTURES, MONOGRAPHS AND CASES.

On the Pathological Basis of the Treatment of Joint Diseases. By HENRY G. DAVIS., M.D.

(Read before the New York Academy of Medicine.)

For many years my attention has been directed to the treatment of diseases of the joints, and I have been led gradually to adopt views differing materially from those generally received by the profession, in relation to the causes operating to destroy, not only the cartilages, but the bones upon which they rest.

This difference of opinion has produced a corresponding change of treatment of the diseases in and about the joints; and I might say that no further evidence is required of the correctness of the theory, than that afforded by the success of the treatment based upon it.

In investigating this subject, it has been difficult to procure from books direct evidence upon the point which it will be my endeavor to establish, for the reason, that those who have examined and reported cases, have not so recorded their observations as to give the desired information. Not recognizing the causes which are assigned in this paper as operating to produce the lesions discovered, they have given but a partial narration of the facts their examination would have revealed, had their attention been directed to the point under consideration.

To illustrate, cases of fracture of the neck of the femur are reported, that had been under treatment by the straight splint for months.

In the *post-mortem* reports, the state of all the articulations below that of the fracture are detailed, while that of the hip, the seat of the injury, is omitted.

Had the condition of the hip-joint been given in every instance of fracture of the neck of the femur treated by the straight splint, and the result of dissection recorded, together with the description of the other articulations of the injured limb, the array of facts would have been abundant. As it is, I have obtained two cases from the books, in which all the facts having a bearing upon my theory are fully detailed; facts that quite conclusively support the views I shall advance as accounting for the phenomena witnessed.

There are, however, a sufficient number of cases in point, in which the facts (so far as related) correspond with the two mentioned. In adition, several surgeons have kindly supplied me with further testimony, derived from their own observations; and what is gratifying, as well as encouraging, to an investigator in a new field, they have been disposed to acknowledge the correctness of the conclusions to which the facts have led me.

During the course of inflammatory processes in and about the joints, after they have advanced to a certain point, the joint becomes in a measure fixed, and not unfrequently so much so, as to resemble true anchylosis. The time necessary to produce this result varies according to the character of the structure inflamed.

Nature appears to establish this immobility of the parts as a remedial measure, and, so far, it is safe to follow her guidance. In order to do this understandingly, however, let us inquire what is her aim and intention in thus rendering the joint immovable. It undoubtedly is to protect the surfaces of the joint, (that come in contact in the natural movements of the limbs,) when diseased, from friction. The pain which friction causes prompts the sufferer to second this intention of nature by his voluntary efforts. So far as this object can be accomplished by the muscles holding the joint motionless, they so act. Now, in effecting this immobility, are the muscles of the diseased joints relaxed, and therefore at rest; or, are they in a semi-contracted state, and thus fix the joint by acting equally upon every side of it? It would appear, from some facts I shall adduce, that the latter is their condition.

In inflammation in and about joints, when it has advanced to a degree that renders motion painful, if any attempt is made to flex or

extend the limb, the motion is communicated to the part beyond, in a similar manner as when the joint is anchylosed.

This immobility in some cases may be in part produced by the tumefaction accompanying the inflammatory process; but tumefaction is not necessary to the result, for in the very cases of chronic morbus coxarius where no swelling exists, the immobility is most marked. Anæsthesia has been produced in these cases without relieving the fixed state of the joints; yet that there was not true anchylosis, was proved by the perfect freedom of motion after a few days of treatment by elastic extension.

Again, in a limb with disease of the hip-joint that has been under treatment until it will admit of flexion and extension readily if moved gently, yet if handled a little roughly, all the muscles will be upon their guard, and the pelvis will be found following every motion of the femur.

If it is true that the diseased joint is held in a fixed position by a certain rigidity of the muscles passing to or beyond it, an amount of pressure corresponding to the contractile force of the muscles, as then exerted, must be produced upon the articulating surfaces of the joint. The inquiry may be made—Does not the joint in health sustain a much greater amount of pressure with impunity? To answer this question, let us examine a particular point in the mechanism of certain joints, of which the knee furnishes an example. The lower portion of the femur terminates in two condyles, each of which presents an articular surface, narrower, but at the same time more extensive, antero-posteriorly than the corresponding articular surface of the head of the tibia. Not the whole, therefore, but only a part of the articular surface of the condyle can be in contact with that of the tibia at any moment; and the precise portion in contact varies with every variation of flexion and extension of the knee-joint; this will be evident, when we consider that the concave surface of the head of the tibia and the convexity of the condyles of the femur do not correspond. When the limb is in exercise, or when its position can be frequently changed, no difficulty arises from the contact and pressure, because then the point of pressure is constantly changing, and when not in exercise, its position is altered whenever any inconvenience is experienced. In health, therefore, the pressure is never exerted upon any one point for a great length of time continuously, but is ever changing from one part of the whole surface to the other.

It is for this reason that a joint in health can suffer the weight of the body to rest upon it without injury; but when the parts are

fixated by disease or artificially, the pressure, whether it be a portion of the weight of the body, or only the contractile power of the muscles, (as exerted in fixing the joint,) falls entirely upon a small portion of each condyle, and a corresponding portion of the head of the tibia in contact with it. If it is admitted that only a small portion of the articular surfaces of the condyles and the tibia are in contact at any given time, in the normal condition, we are prepared for the inquiry, What will be the result of continual pressure, effected by the contractile force of the muscles while fixing the joint; a compression from which there may be no relief for weeks or months in succession?

The effect of continued, unremitting pressure upon other portions of the body is well understood.

Every practitioner cautions his pupils not to allow the heel to rest upon the bed while treating a case of fracture of the lower limb, warning him that, if he does so, the parts will slough; this result takes place, not because of the *severity* of the pressure, but from its *persistency;* from its not allowing, by change of position, the circulation, and consequently nutrition, to proceed uninterruptedly. The liability to this casualty increases the less sensibility there resides in the structure affected. It is also promoted by diminished vitality. We can hence easily understand why it so readily takes place in the heel. I would call attention to this fact, as I shall have occasion to notice the importance of its consideration when applied to the effect of pressure upon cartilages.

There are two reasons why diminished sensibility and nutritive endowment should render parts liable to destruction by pressure. First, the sensibility being slight, death of the parts occurs with very little suffering. Secondly, the vitality being low, less pressure is required to interrupt the vital functions, and thus cause death.

I trust that I shall be able to show conclusively, that in inflammations external to the capsules of the joints, sufficient to render them motionless, absorption, if not death, results to those portions of articular cartilage in contact and pressing upon each other; that this occurs when the external disease has not extended to the articular surfaces, and that it is owing chiefly, if not entirely, to continued pressure; this pressure being limited to that portion of the articulating surfaces that are held in contact for a period of time, without intermission or change, by the muscles which control the motions of the joint affecting the parts, precisely as pressure does when applied to the surface of the body, viz., producing absorption, when not sufficient entirely to arrest the nutrition of the parts, and when going be-

yond this point, death, with exfoliation of the parts pressed upon. For *this is precisely the result* we find in joints rendered immovable by artificial means. If this result follows from pressure in a previously healthy articulation, how much more destructive must be the process in a joint whose vitality is depressed by disease!

This view renders intelligible the *modus operandi* by which cartilages and bones, in some instances, are so rapidly destroyed. This result to cartilages from pressure is rendered more readily admissible when we consider the manner in which they are nourished. Cartilages are without blood-vessels and nerves of their own; those of the surrounding parts terminate at their surfaces; those of the synovial membrane at its junction with the edge of the cartilage; those of the bone at its point of union with the cartilage. It is not necessary for my purpose to show the precise way in which cartilage is formed, only that it is possessed of a low grade of vitality. In respect to its mode of nutrition, the cartilage resembles the cornea; and, as the effect of imperfect nutrition upon this portion of the eye has been fully established, I would direct attention to this point to illustrate the influence of like causes upon the cartilages. The justness of the comparison will be admitted if we keep in mind the similarity of their modes of receiving their nutritive supply. In experiments instituted by physiologists upon the inferior animals, it was shown that the cornea was readily affected with ulceration, when they were fed upon certain articles of food that did not furnish them with proper nourishment. I mention this fact to show how easily parts which are not supplied with blood-vessels take on the *ulcerative process*. In the case of the cartilage, the cause is mechanical which interferes with nutrition, but the result to the parts immediately acted upon is the same, viz.: deficient or interrupted nutrition by reason of uninterrupted pressure. That this result follows, is proved by the anatomical fact that the centre of the ulceration is always at the point of greatest pressure, as revealed on dissection in the cases presently to be cited.

There is yet another reason, founded upon the structure of a joint, why continued pressure with immobility should be attended with danger. The cartilage being an elastic substance, and affixed to the ends of two bones whose surfaces do not precisely correspond with each other, the greatest amount of pressure must come upon the centre of those portions in contact, gradually diminishing to the circumference; in this respect they are unlike two solid bodies, where the pressure would be equal upon all the parts in contact. The difficulty that would arise from this construction of the parts in a small articulating

surface like the hip-joint, where it is subject to great pressure, is somewhat obviated in this joint by a thickening of the cartilage around the upper surface of the acetabulum, in the form of a ring, which admits the extreme upper portion of the head of the femur to pass into it; thus presenting a larger surface to receive the pressure than would have existed had the cartilage been of an equal thickness throughout.

When a joint or limb is rendered immovable, its functional law is violated, and a corresponding penalty incurred, viz.: that following the loss of its accustomed exercise. A part suffers from this cause in proportion as its normal condition is one of greater or less motion; the joints and muscles must therefore suffer more in proportion than any other part of the body. This effect of rest has been noticed by authors as manifesting itself by ecchymosed spots upon a limb, as well as in a joint, rendered immobile; while its fellow, not kept motionless, was not so affected. Rest alone might not be sufficient to produce, in a particular case, very deleterious effects; but when we add to it continued pressure, and that, perhaps, applied to parts already somewhat enfeebled, we have influences that are potent for evil—influences that have wrought the destruction of many limbs, if not lives.

The first case that I shall give in support of the views I have presented is one reported by Dr. South, in his translation of Chelius' System of Surgery, as coming under his own observation.

"J. S., aged 25 years, a baker, came under my care in the year 1843. Three months after having typhus fever, four and a half years since, his right knee became weak, and he began to limp. At this time there was not any swelling of the joint; but during the following six months the knee swelled, and he was under medical treatment; an abscess formed below the knee-cap, and burst, subsequently, by two wounds below, and on the inside of the tubercle of the shin-bone. A discharge continued for four or five months; during which time he followed his business, and walked about a great deal. The wounds at last healed, but soon after swelling occurred below and around the knee-cap, and thirteen months since it suppurated, and continued discharging on the apex of the knee-cap till the beginning of April in this year. During the whole of this time he has walked, though not without pain, but has been unable to follow his business. The discharge having ceased, general swelling of the whole knee commenced, and he began to feel weakness on the sides of the joint. Being again crippled, he came into the hospital."

His condition grew worse, until his life was endangered. The doctor resolved to puncture, with a view to anchylosis.

"Aug. 19, 1843, made a puncture with an abscess lancet on the outside of the base of the knee-cap, where the skin was thinnest; blood and synovial fluid flowed out; the patient failed, and amputation was resorted to, saving the patient." "On examining the joint," he says, "the whole of the synovial membrane lining the capsular and extending over the other ligaments of the joint was found covered with a vascular, thick, soft, and granular substance.

"The cartilage on the *edge* of the patella was partially absorbed, as also that on the left articular cavity of the head of the tibia, in a semicircular form, and on both condyles of the femur it was partially removed; these corresponded to the granular substance on the synovial membrane, and a groove on the cartilage of the internal condyle answered to a remarkable slip of the granular substance, which crossed between and connected the capsular and crucial ligaments. There was not any pus in the joint."

The history of this case (most of the details of which I have omitted, because of its length,) corresponds quite perfectly with that of ordinary cases of morbus coxarius. The same pains, upon motion, the nocturnal exacerbations, the constitutional irritation, &c., &c.; it differs from the latter, however, in the entire absence of pus.

In this case we find the greatest amount of destruction of the cartilage precisely at those points exposed to constant pressure; the edges of the patella, the surface of the condyles, and the corresponding surfaces of the tibia, are the parts that suffered.

Have we, in this case, any disorganization within the capsule that might not have been effected by continued pressure and immobility, producing absorption of the cartilage, and a changed synovia in consequence? The condition of joints, where simple rest has been produced artificially, will throw some light upon this point.

Bonnet, in a work published in 1845,* gives the result of observations made by himself and Teissier, on the effects of prolonged immobility upon joints. He says, "I am about to demonstrate, anatomically, that long-continued immobility can produce severe diseases in the healthy joints." And then goes on to give the following results:

"1st. Effusion of blood and of serum in the articular cavities.

"2d. Injection of the synovial membranes, and the formation of false membranes.

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* *Traité des Maladies des Articulations*, accompagné d'un Atlas avec 16 Planches, par A. Bonnet, Professeur, etc. Paris et Lyon: 1845. Tome 1re, f. 9, et conseq.

"3d. Alteration of the cartilages.

"4th. Anchylosis."

He says, "I have not mentioned stiffness of the joints among the anatomical lesions which their immobility produces. This stiffness is frequently observed, and ought to be particularly considered as an effect of the alterations which the autopsy reveals in the cartilages and in the synovial membranes." He speaks of a local scorbutic affection, mentioned by some authors as produced by immobility. They have frequently noticed, he says, violet spots appearing upon immovable limbs. He gives M. Teissier credit for having first noted this effect of immobility upon the joints. The latter says, "I have almost invariably found in all the articular cavities of the diseased limb, even in those most remote from the solution of continuity, the secretion of synovia replaced by bloody serum, and even by liquid blood, almost without admixture. In one case, and one only, I have found clots of blood. This was in an old man, confined for six months for fracture of the neck of the femur."

Teissier says, also, that he has twice had occasion to observe considerable hydrarthrus of the knee, in two cases of fracture of the lower limb, in persons previously perfectly healthy. Under the second head, Bonnet writes, that in connection with effusions he should mention injection of the synovial membranes. M. Teissier, he says, has observed it in every case, without exception, which he has examined; that it exists particularly in those folds which the synovial membranes present normally, and which have a broken appearance. These folds become red and inflamed. "Sanguineous effusion and injection of the synovial membranes are the two first degrees of the effects produced by immobility.

"They are always found where the joints are materially altered, and are never wanting where false membranes exist. These last are observed but rarely as a consequence of immobility. In all the cases in which M. Teissier observed them, they were already supplied with vessels, and adhered to the cartilaginous surfaces.

"Their existence appeared to demonstrate that long-continued repose can produce in the joints lesions of an inflammatory nature." As to the third effect mentioned—viz., the alteration of the cartilages—he affirms, with Teissier, that "continued repose can produce serious alterations of the cartilages—such as redness, swelling, softening, erosion, and wasting away. The redness which is observed on the cartilages after immobility may be uniform or punctate. Where the cartilages are not eroded, it presents itself under the form of ecchy-

mosis more or less deep. On the contrary, where the cartilages are ulcerated, it is unequal, dotted."

In speaking of ulceration of the cartilages, he says that it proceeds from the free surface to the adhering surface.

"*Observation* 1*st*.—A man, 60 years old, entered the Hôtel Dieu of Lyons with oblique fracture of the middle of the femur. The limb was placed in Boyer's splint, and permanent extension made. After three months' treatment, the patient contracted diarrhœa, and died without having experienced any pain in the joint of the fractured limb.

"*Autopsy*.—The bones of the fracture are blunt and rounded, without the least trace of agglutination. A bundle of muscular fibres separates the ends of the bones. The soft parts are infiltrated with blood to a great extent, but do not present any sign of inflammation. The knee of the affected side contains a great quantity of effused blood. The cartilage of the internal articular fossa of the tibia, upon the posterior side, is destroyed to half its depth, in a circular form, having a diameter of one centimeter.

"The loss of substance is upon the free side, the depth unequal, and the circumference injected for some lines.

"The portion of cartilage, of the internal condyle of the femur, contiguous to the erosion, of which we have just spoken, is affected in all its thickness by a loss of substance, similar in its aspect and dimensions. The cartilage of the external articular fossa of the tibia is ulcerated behind in an irregular space, being about two centimeters in length. The loss of substance is of little depth, and unequal; the contexture of cartilage which supports this erosion is evidently softened and swollen; the other portions of the cartilage present an injected appearance, of a lively, uniform red. A similar redness is observed in the cartilage of the external condyle of the femur, in the whole extent corresponding to this last loss of substance. The diseased cartilages are detached from the bones with the greatest ease, but the femur has not undergone any alteration.

"The tibio-tarsal joint, notwithstanding its distance from the fracture, also presents an effusion of blood, a yellowish tint of the cartilages, which are also deprived of their polish, and an injection with tumefaction of the synovial membrane, which forms a fold between the tibia and the fibula."

"*Observation* 2*nd*, (communicated to Bonnet by Dr. Martin.)—A female 70 years of age, of impaired constitution, confined to the bed

68 days with fracture of the neck of the femur. She was kept in Desault's splint; died of bronchitis.

"*Autopsy.*—Knee quite immovable, and appeared fixed by the enlargement of the lateral ligament, lost in the midst of a cellular tissue, infiltrated with serum, and become compact.

"At the interior of the joint is found an effusion of blood, a little serous, amounting to about 30 grammes.

"The portion of synovial membrane which covers the intercondylian groove is very thick, puffed up, and as if ecchymosed. That which covers the crucial ligaments is equally infiltrated with blood. A vascular arborization, intermingled with spots or stains of ecchymosis, is delineated on the internal part of the external condyle of the femur, the cartilage of which has lost its polish at many points. The cartilage of the internal condyle is equally stripped of its polish in part, and generally softened, as well as the cartilaginous lining of the articular surfaces of the patella and tibia, which have taken a very decided yellow tint. The interarticular cartilages are infiltrated with blood. The cellulo-adipous bundles which sustain the posterior surface of the patellar ligament are swollen, and terminated by a fold of bloody bordering, which penetrates into the femoro-tibial articulation.

"The cartilage of the patella is in a great measure absorbed, and considerably softened, as we have already said, in that part which has escaped destruction.

"The bloody effusion shows itself in patches on the parts of the cartilage which are preserved.

"The bones do not present any trace of inflammation."

"*Observation 3d.*—Elizabeth B., aged 72 years, entered the Hôtel Dieu in July, 1839, to be treated for a fracture of the neck of the femur. The fractured limb was placed in extension, and kept in that position by the aid of compressive and immovable splint. After seven or eight weeks of fruitless treatment, as the patient suffered much, we were obliged to take off the splint, and abandon the fracture to the efforts of nature and to repose. This woman died after five months' confinement in bed, without any other symptom than extreme prostration.

"*Autopsy.*—We found the hip-joint healthy; an effusion of bloody serum in the knee; the cartilages yellow and rough in many points, and eroded in those of their parts which are naturally in contact in extension. The joint of the foot, examined with care, presented the same lesions, but in a less decided degree."

"*Observation 4th.*—Peter M., aged 85 years, of a very good con-

stitution, entered the Hôtel Dieu November, 1840, to be treated for an intracapsular fracture of the neck of the femur. He remained in the splint six months, but the fracture did not heal. At the end of this time he contracted a severe diarrhœa, and died in a few days.

"*Autopsy.*—We found absorption of the neck of the femur complete, and all consolidation wanting. The bony extremities of the knee were infiltrated with blood. The femoro-tibial joint contained a great quantity of bloody clots, black, very dull, and not fibrous.

"We found, also, some effused blood in the subsynovial cellular tissue, and even between the articular cartilages, and the bones which they cover; insomuch that these could be denuded with the greatest ease. As to the hip-joint, although there was an intracapsular fracture, it did not present any lesion."

Prof. Valentine Mott corroborates the statement, that the point of greatest destruction is also the point of greatest pressure, varying according to the position of the limb during its period of immobility.

Inquiries made of Professors Willard Parker, Van Buren, Markoe, and Krakowitzer * have been honored with the following replies:

NEW YORK, *Sept.* 3, 1860.

MY DEAR DOCTOR—On looking over my notes of dissections of diseased joints, I am sorry to find that the point about which you are most interested has not in any one of them been particularly noted, and I fear that you will find this to be the fact with most of the published cases, as it is a point to which the attention of observers has not been particularly directed. Since our conversation, however, I have seen the dissection of two knee-joints, amputated at the New York Hospital, which bear upon the point at issue. The first of these was a patient of Dr. Watson, who had been injured, I think, by a railroad contusion, some weeks before amputation. Suppuration and opening of the joint occurred, and during his confinement the limb was kept on an inclined plane at a slight angle. On examination after amputation, we found the usual condition of synovial infl. and suppuration, but precisely at the spots where the condyles of the femur pressed upon the surfaces of the head of tibia, there ulcerative action had gone on to so great an extent that the bone was exposed and already carious. This was the case both on the femoral and tibial surfaces of the articulation, and was the more striking, as in all the remaining portion of the joint, which had not been exposed to pressure, little or no ulcerative action had taken place.

* The very interesting letter of Dr. Krakowitzer has been unfortunately mislaid. H. G. D.

The second case was one in which the knee was amputated by Dr. Parker, for long-standing disease, where the joint had been open by an incision some weeks before the operation. We found here more extensive general arthritic degeneration, but the ulcerative action was almost entirely confined to the points at which the bones had been so long in contact. At these points the disorganization had reached a point very nearly equal to that described in the first case, while the other parts of the articular surface showed thickening, vascularity, obliteration, superficial erosion, &c., but no deep or extensive ulceration.

With regard to the other matter we were talking of, viz., the situation of the pus in cases of diseased joints, my notes are more explicit. I find I have recorded eleven dissections of joints which had undergone suppuration, either in the course of chronic disease, or in consequence of injury, seven being cases of chronic disease and four of injury. In all these the dissection was conducted by first opening the cavity of the abscesses and noting how near they approached to the synovial membrane, and then by carefully opening the joint at some point where it was not covered by the abscesses, and carefully tracing the continuity of the synovial membrane. Thus examined, we found that in every case of chronic disease the abscess was external to the synovial sac of the joint, though generally approaching it in several points, so that only the thickened serous membrane intervened between the abscess and the synovial cavity. From these points of contact the abscesses were found to extend irregularly in all directions around the joint, forming numerous cavities and sinuses all communicating with each other, but not communicating with the cavity of the joint, except in one instance. In this case a narrow and tortuous track of communication was found between the extracapsular abscesses and the cavity of the joint, which cavity contained pus. This was the only instance in which, in this class of cases, we found any pus in the joints, or any communication with the abscesses, some of which were exceedingly extensive, and of very long standing. In this exceptional case the abscesses had existed for a very long time, were entirely extracapsular, and only communicated with the joint by the small track described.

In the four cases of disease originating from injury, an entirely different condition of things was found. In these the synovial sac was the seat of the suppurative action, and no extracapsular abscesses existed at all. In the cases where the abscess had not been evacuated before the dissection, the synovial sac was found distended with

pus, and in one instance it had given way, and the matter was beginning to burrow up the thigh. In the cases where the joint had been for some time open and discharging, the synovial sac was of course not distended, but it marked the limit of the suppurative action, though itself, as well as the cartilages, were much more extensively destroyed than in the cases of chronic disease. As these eleven cases of joint disease were not selected cases, but embraced all I had a chance of dissecting during the period of observation, some three or four years, I think they may be taken as indicating the general features of the anatomy of the disorder in its two phases, though of course it would not be safe to consider any pathological point as settled by so limited a number of observations.

Hoping to hear from you again on these subjects, which seem to me to have most important practical bearings,

I remain very truly yours,

T. M. Markoe.

Dear Sir—I have received your note of inquiry as to my observations in joints where the same points of surface have remained long in contact with the pressure of the muscles.

I beg leave to reply, that I have often seen in the knee-joint, after amputation, when the joint was opened, that where the surfaces had remained long in contact, the synovial membrane and cartilage were removed by absorption, and the bone at the same point dead for from an eighth to half an inch in depth.

In exsection of the knee-joint, on opening the cavity, I have found the same destruction to have occurred. The same pathological condition is observed at the hip-joint. Indeed, I regard it as established, that if the surfaces of the joints be allowed to remain long in a fixed position, the pressure from the muscles causes destruction of the substance making the wall of the joint. We see the same condition resulting in the joint, that happens when pressure is allowed upon the heel in the management of fracture—viz., ulceration and sloughing.

The more feeble the patient from scrofula or otherwise, the greater the danger from pressure.

You particularly called the attention of the profession to the above pathological state, in the American Monthly, some five years ago, I think. You then stated the great importance in the treatment of hip disease, &c., of keeping the surfaces of the joints from pressure by the application of extending and counter-extending force, and referred to the great value of the India-rubber in applying the power.

The application of the splint in hip disease to establish extension and counter-extension, and at the same time permit the patient to walk and live in the air, as you have practiced for years, is a matter of great moment. You have laid the profession and the public under lasting obligation. Yours truly,

WILLARD PARKER.

To H. G. DAVIS, M.D.

NEW YORK, *August 20th*, 1860.

DEAR DOCTOR—In thinking over the many cases of diseased joints which I have examined, after amputation and otherwise, my impression is strong that the greatest amount of disorganization has generally existed at those points where opposed articular surfaces have been habitually in contact with each other. This is, however, a general impression only, as until recently my attention has not been directed to this particular point of inquiry. A recent case in which I exsected the knee-joint in a young woman for chronic strumous synovitis, afforded strong and indubitable evidence on the point in question. In the centre of each of the articular depressions of the head of the tibia, I found a necrosed plate of bone, each about the size and thickness of a dime, lying loosely upon a bed of granulations. The articular surface was elsewhere profoundly altered, but except at these points, not beyond possibility of repair to the extent of anchylosis. I was gratified in recognizing the necrosis in this case, as it demonstrated the propriety of the operation of exsection, which was followed by an excellent result, the patient recovering with an exceedingly useful limb. The points of necrosis, you will have noticed, correspond with the localities upon the head of the tibia, with which the convexities of the two condyles of the femur had been in most constant contact.

My friend, Dr. Krakowitzer, informs me that in a recent successful case of exsection of the knee for similar disease, he encountered the same appearances at the same points.

I have heretofore believed on the evidence adduced by Bonnet, of Lyons, in his monograph upon diseases of the joints, that prolonged immobility of a joint was always followed by inflammatory action, and this has been confirmed by my own observation; but it is not improbable that the contact and pressure of opposed surfaces may play an important part in causing and aggravating the tendency to disorganization at the points of greatest pressure.

Truly, your friend,

DR. DAVIS. WM. H. VAN BUREN.

In the observations quoted from Bonnet, there are two that are more full in their description upon points that are of consequence for illustrating the theory that simple rest or immobility alone is insufficient to affect a joint as disastrously as he believes.

These cases are those of intracapsular fracture of the head of the femur, when the patient had been confined for some time by treatment.

In these, ulceration had taken place, but was *limited to the points of pressure.* There is another fact of importance to which I call especial attention. In these two cases, *all the articulations below the seat of the fracture were disorganized, while the hip-joint, the locality of the injury, (the fracture being inside the capsule,) remains in a healthy, normal condition.* Why should not this, rendered more liable, one would suppose, by the injury, be affected like the others? All have been exposed, apparently, to the same influences.

But there is in reality an important difference of circumstances, and one which bears directly upon the question I am endeavoring to elucidate.

The head of the femur, being separated from the shaft, beyond the attachment of the muscles, remains isolated, and is beyond the reach of pressure from their contraction. It is in a state of *perfect rest*, while the other articulating surfaces of the confined limb, although at rest so far as motion is concerned, yet are liable to be approximated by the muscles, and consequently subject to pressure against each other equal to the contractile force of the muscles in action.

Where the cartilages remain free from pressure we find the joint healthy, while the cartilages subjected to continued pressure in the same limb and under the same circumstances otherwise, are extensively disorganized; the greatest amount of disorganization, too, being precisely at the point of greatest pressure. Are we not forced to infer that pressure performs an important part in this destructive process?

Now, what practical conclusions can we draw from the views advanced?

First.—That in all diseases exterior to the joint, when of sufficient gravity to render the same functionally immovable, and when continued for any length of time, the cartilages should be relieved from pressure by extension.

Secondly.—When the disease is within the capsular ligament, extension should be applied from the commencement, as the destruction of the cartilage will be in proportion to the activity of the inflammatory process.

Thirdly.—In immobility of the joints, from whatever cause, change of position of the articulating surfaces must be frequent, or extension applied. This extension should always be by means of a cord, pulley, and weight, or by some *elastic* material, *the result of both being that a certain amount of extension is kept up, whatever may be the position of the limb.*

This is never fully accomplished by fixing a limb in a given position, as by the ordinary splint, with its so-called extension. When extension is made by an elastic material the muscular fibre becomes wearied, the nervous influence is expended, and the bones come down until the extending power is exerted entirely upon the unyielding tissues. There is, practically, a radical distinction between fixing a limb as by the old mode of extension, and that by which an unremitting draft is kept up upon the muscles, and yet the limb is not so fixed but that the muscles may contract and thereby exhaust their nervous influence, and ultimately rest like any muscle wearied from exercise.

Previous to my introducing it, I have never seen elastic extension recommended, except by one author, and he advised it simply for the purpose of preventing surgical apparatus in fractures from loosening, and not for the reason for which I use it, viz., for overcoming muscular contraction.

It will not be amiss now to state what application of the principle of what I term "continued elastic extension," I have made, and with what results.

In ulcerations of the intervertebral cartilages and of the bodies of the vertebræ, I have devised apparatus that separates the diseased vertebræ from each other, and imposes the labor of sustaining the weight perpendicularly upon the lateral processes. Here it can rest until the disease stops, and the cavity is filled by bone. With this treatment restoration takes place with a good figure.

For morbus coxarius I have originated the treatment by appropriate splints, with which most of the members of the Academy are acquainted. The management of hip disease, based upon this principle, relieves entirely the suffering, puts the parts in the best condition for perfect restoration, and even if the disease is not checked, the limb is kept at full length and in a correct position.

Affections of the knee I treat in a similar manner and with the same success. I have devised an apparatus that will keep up extension upon this joint, and yet admit of flexion of the limb, the whole weighing but a few ounces.

The principle of the latter apparatus is also made applicable to the elbow and other joints.

Moral Insanity in Relation to Criminal Acts. By Dr. J. PARIGOT, late Commissioner in Lunacy of Belgium, and Chief Physician of the Establishment of Gheel; Honorary Professor of the University of Brussels; Member of several Academies and Learned Societies; Founder of a Private Asylum for Insane, conducted on the Belgian System of Free Air and Family Life, at Hastings-on-the-Hudson.

(Continued from September No., p. 173.)

It is perhaps curious to remark, that the question which now occupies so much both the lawyer and the physician, relative to the responsibility and punishment of insane culprits, should have been settled three hundred years ago by Miguel Cervantes de Saavedra. We find in the third chapter of Don Quixote this curious passage: "El ventero daba voces que le dejasen porque les habia dicho como era loco, y que por loco se libraria aunque los matase á todos:" "the innkeeper cried, as best he could, they should leave him alone; he had told them, besides, that his guest was mad, and as an insane person would be declared *Not Guilty*, even if he killed them all." This is certainly a clear solution of the proposed question—no punishment could be inflicted on a man whose friends, the barber and the curate, had tried all means to cure; but we may suppose that the good sense of Cervantes was much in advance of the public opinion of his time, and that his fiction concerning his hero was not in conformity with existing laws, Spanish or foreign. At all events, we cannot too much admire the genius of Cervantes, who could so well describe a case of insanity originating in a moral cause, (El mucho leer, velar, y poco dormir,) which led to, what might be called, an *errant chivalric* monomania, or a lucid insanity. All the phases of this disease, its moral and physical symptoms, are minutely described. Don Quixote is represented a madman, who, although full of intelligence and good sense, is subject to hallucinations, fits of mania, and sometimes of lypemania, during which he often wounded inoffensive persons, and might have killed many without being considered a murderer.

Now, in spite of the rational solution contained in Cervantes' book, and the so-called *lights* of our century, we are still in the dark. Physicians not only dispute with lawyers on irresponsibility of criminal lunatics, but they cannot agree even amongst themselves; some of them seem apparently to favor the opinion of some judges; they wish to find a *common measure* between sanity and insanity, two incommensurable entities, and, as Drs. Bucknill and Delasiauve do, they try to proportion punishment to the proportionate wickedness and folly of an

act. Some other physicians are impressed only by the importance of moral symptoms, and their result in social life; they wander in the debatable land of psychology, not taking sufficient care of the physical symptoms, which nobody can deny to be of the utmost importance. In this latter system, almost every case of immorality which poisons social life should be amenable for its cure to an asylum of lunatics.

Now, a gentleman of great talent, Dr. Trelat, who was in 1848 Minister of Justice of France, has written lately a very interesting work, containing a great number of observations made in his hospital, *La Salpétrière*, in Paris. He says, in his preface, that many of his friends objected to the title of his book—"*Lucid Insanity.*" Well, is there such a disease? We think the author's plan was to describe some cases in which neither the moral nor the physical morbid causes had yet completed their work of destruction. This might forcibly be called lucid insanity—an intermediate state between reason and folly; but we believe that, respecting the real cases of moral insanity, or diastrephia, this title contains an insupportable antithesis. Concerning the diastrephic cases, their moral symptoms are mentioned in the following words: "These patients are insane, but do not appear so, because they express themselves with lucidity; they are insane in their *acts*, not in their *words*."

The theory of diastrephia is here plainly explained in a few words by a man of great authority; it is not extraordinary that we should find in his work, as in the excellent treatise of Bucknill and Tuke, ample proofs of a perversion of volition, being an isolated moral symptom, but connected with numerous physical signs proving a real insanity.

The difficulty of tracing pathological signs must certainly be very great in the *squanderer*, the *proud*, the *evil-doer*, the *suicide;* and if these symptoms are not connected with a state of mania, lypemania, or dementia, we know that physical signs are sufficiently apparent when looked for in monomaniacs, satyres, nymphomaniacs, diptomaniacs; therefore the examples given by Dr. Trelat demonstrate the difficulty, not the impossibility, of finding and tracing pathological symptoms. Sometimes only an incipient stage of insanity is found, in which the moral symptoms might as well belong to a moral perversion, as they can be considered as the result of organic ailment.

Now, this state of mind forms the "*Debatable Land of Psychology,*" (the title of a very good article in the *London Medical Critic,*) and is not only limited by individual differences of intellectual strength, moral

sensibility, or power of volition, but its limits, that is to say, the liability of becoming insane, depend, also, upon individual resistance to morbid causes; thus we see that hereditary influences determine insanity in many occasions where moral causes could not have produced that effect. At all events, that sort of intermediate stage between sanity and insanity is never of long duration, and in all medico-legal questions must be fairly brought or attributed to insanity; the same reason shows that it is impossible to fix a standard for the various forms of insanity, and that each case bears only a comparison with an anterior state of the moral faculties of the same individual.

Dr. Trelat shows in his work that many imbeciles and simpletons, instead of being cared for in asylums or retreats, as they ought to be, are often, from various motives, thrown in the world, exposed to social life, and even become heads of families, of which they soon become the shame or the ruin. He records many private cases, in which young idiotic females, possessed of the ordinary attractions of young persons, found husbands because they were rich heiresses; others were married because it was the wish of their parents, who thought it would, perhaps, better their mental condition! The worst results that can be imagined followed those immoralities; according to the very interesting cases related, these unfortunate females were the despair of their husbands and children. We need not say that it would be very difficult to distinguish weak-minded persons from simpletons and imbeciles, if physical symptoms showing signs of corporeal infirmity and mental degradation could not be found. Imbecility and idiocy are often accompanied by strong inclinations and impulses to generative functions; then it gives a peculiar feature to these unfortunates, called *satyres* and *nymphomaniacs*. Certainly we find in society many individuals who are dominated by such instincts, so that they are, so to say, absorbed by a sort of generative furor, which leads them to the most shameful acts; but if these persons are not idiotic or demented, who could maintain that they are not responsible before the law, for their crimes? Here we find no occasion for an alleged *lucid insanity;* they are nothing but men given entirely up to their brutal passions. Dr. Trelat observes, that generally the monomaniacs display much industry and ability in concealing their fixed ideas; from this he is led to suppose that a great many of them are found at liberty in society, where they are the cause of much unhappiness; we believe there is a little exaggeration in this proposition. Dr. Trelat is not the first observer that has supposed the whole humanity was insane in a certain degree; the more or less making the only difference between the so-

called sane and insane persons. It is true that, by indulging so many causes of insanity, we appear to set that disease at defiance with us. But if there was a sufficient reason, or an unlimited power to inquire into the private affairs and conduct of individuals immoral or scandalous, to what abuses would it not lead? How many eccentric, wayward, or systematic persons would not be deprived of their liberty in order to prevent them from injuring others or themselves? Curious ideas, peculiar habits, &c., would be considered as real symptoms of insanity. We protest against such notions; and in the several papers published on diastrephia, we have always insisted that all the pathological signs should be present and described, in order to insure the correctness and value of medical affidavits concerning insanity. Now, we must say, that the practice of Dr. Trelat is much different from his theory; for all the cases he mentions as lucid monomaniacs, are real maniacs presenting moral and physiological proofs of their infirmity.

Everybody knows the characteristics which distinguish the *erotomanes* from nymphomaniacs; maniacs, and the so-called monomaniacs, present the moral symptom that their conscience is deranged or bewildered by delirious conceptions or perverted ideas. Now, the erotomaniac is deluded by an exaggerated or perverted feeling, which leads him to lypemania. Now, besides other signs of insanity, they present the symptom of a delirious Platonic love; but love has often turned people mad. Can we say that all lovers are without self-control and insane?

The chapters devoted first to illustrating the *lucid insanity* of jealous wives, husbands, and lovers, and afterwards those dedicated to proving the insanity of *squanderers, adventurers*, the *vain-glorious*, the *ambitious*, and even *evil-doers*, are remarkable as giving many instances of incipient insanity, or showing the possible continuation of vices in the moral life of insane persons. Dr. Trelat relates, also, several cases of dipsomania, which disease we have referred to one of the special perversion of the will. The special character of that disease is the periodicity of the fits, accompanied or followed by a more or less protracted mania. In many cases we had occasion to observe, the intervals of lucidity have varied from a few days to two, three, and even four years.

The name of dipsomania may be extended from insane liquor drinkers to the opium and haschich-eaters. Casper, the celebrated Prussian expert in medico-legal questions, relates the case of a maniac who employed chloroform to bring on a certain state of mental enjoyment.

As to the insane kleptomaniacs, there are no lucid intervals when the stealing mania is accompanied by idiocy, dementia, or general paralysis; but when that moral infirmity is a symptom of insanity, it is accompanied by other symptoms which leave no doubts about the real irresponsibility of the evil-doer.

All the cases that Dr. Trelat describes as *lucid manias* may be referred to diastrephia, or perversions of the will. The forms of that disease are various almost as each individuality. In all the cases mentioned in Dr. Trelat's book, the fits are intermittent, as we have described them in our first memoir read before the Academy. Unhappily, physiological symptoms have not much attracted the attention of the able French writer; however, he finds two special pathognomonic symptoms in perversions of the will—1st, In no form of insanity is ingratitude so great as in perversion of the will; 2d, These patients give no ear to counsel or admonition, and thus never change their mind or their resolutions. In resolution, we may say that Dr. Trelat's work throws a great light on the moral interest which this matter involves in social life; he has laboriously developed rather the moral bearings of lucid insanity than its scientific symptoms and treatment; so much that we may say, that, save the acknowledgment of the *insanity of acts*, moral insanity and diastrephia have not much profited by this special work of one of the most able French writers.

We have still some considerations to add on the discussion which took place before the Academy of Medicine on moral insanity. On one side metaphysical arguments were offered by high and respectable authorities in jurisprudence; whilst on the other side medico-psychological principles were the firm ground taken and defended by the majority of the gentlemen that addressed the assembly. After the sitting, it appeared, from the impression of several learned members of the Academy, that theoretical arguments had had a fair trial, but that the professional and practical side of the important questions involved in *diastrephia* remained still to be elucidated in some future discussion. Unhappily, many of the men who are the best judges in this specialty are seldom at liberty to attend at the sittings of the Academy. At all events, it will perhaps not be inappropriate to review some of the principles on which the propositions of these our several papers are founded. The question is of great importance, should the subject of insanity ever be re-examined by the legislative assemblies of the different States of the Union. Besides, we think it an imperative duty which we owe to insane sufferers that

courts and juries should understand these matters in their practical application, and that they should be laid out before them *beyond doubt*, so that it would clear the cases in their mind. The consequence of this would be, that moral insanity, or rather, the false pretence of this name, could no longer secure impunity, and that the real cases of diastrephia should be easily proved. Perhaps such a final conclusion might have the advantage to put an end to *bona fide* differences of opinion between lawyers and experts.

In every disease of the mind, mental phenomena must necessarily have physiological facts for their basis, and even as a condition of their existence. What symptoms are we, then, obliged to find and describe in the so-called moral insanity, or diastrephia? I answer—both moral and physical: the first relating to a perversion of the human will and instincts; the second, the somatical facts, the symptoms perceptible to our senses. These points settled, all the other evidences support, always, the fundamental inquiries. Out of that, physicians do not want to venture in vague theories; and for them, *what is not disease in diastrephia is crime.*

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The late trial of Mrs. Real has been a good instance of an unsuccessful attempt to turn a criminal action into moral insanity; or, at least, into a transitory homicidal mania. This Mrs. Real had shot her alleged husband because, after enduring a long course of abuse, both physical and moral, she had actually seen him in the company of another girl. The public of New York had, in general, much sympathy for the accused; she was young, honest, laborious, and had been really ill-treated by the deceased, who, at least, had deceived her by the imposition that they had lawfully, though secretly, been married. Mrs. Real had found to defend her two lawyers of great talent; a young member of the bar of New York, *Mr. Dumphy*, and the celebrated jurist and orator, Mr. Edwin James. A fact which must not escape our observation, and which proves the remarkable talent of Mr. James, is, that he has been able, in several trials and lawsuits concerning insanity, to prove to juries and obtain verdicts in favor of the parties he defended; making them sane or insane, just as the necessities of his clients required. We must confess that we felt for the sake of justice great apprehensions that this gentleman would have been able to show that the accused was insane, and ought to be sent to a lunatic asylum. With that aim, the eloquent lawyer treated *ex cathedra*, a question of moral insanity taking its origin in the natural feelings of an offended wife, but as non-experts on insanity do, without

considering the symptoms of such disease, and quoting largely what suited his pleadings out of the so-called *most approved* writers on medical jurisprudence; of course the orator animadverted very severely (it was mentioned by all reporters of newspapers) on the testimony of Dr. Ranney, one of our well-reputed experts. Now, we must say, that we found such censure of a counsel on medical testimony perfectly ridiculous; but only excusable, perhaps, with a view to produce an effect on the jury. Was the counsel for the defence unable to find a medical man to oppose Dr. Ranney? Else the question would be, whether physicians, and especially experts, who accept no compromise, are obliged to know no more about such cases than lawyers, attorneys, or judges, who occasionally and hurriedly consult psychological treatises, and who, having given a glance at some cases, mistake them for standards in medico-legal inquiries.

Nothing is more curious than to see both sides armed with many volumes on a science they do not understand; and really, my impression was, that the best argument they could find was to throw them at each other's heads. Who could suppose that Dr. Ranney and Dr. Tilden Brown would be obliged, on the stand, to exchange or lower their special knowledge and experience to meet a sort of second-hand psychiatry? Dr. Ranney resisted all false and captious inductions; he would not see or recognize real symptoms of insanity in the outrage perpetrated on human life. Dr. Tilden Brown, in his direct and cross-examination, was consistent with the latest progress of psychiatry; saying that he could also not find any symptom of insanity in the accused. We find, in this trial, numberless proofs of ignorance of psychology; lawyers spoke of moral insanity, and, in fact, pleaded a sort of transient homicidal mania or fit. Now, the institution of a jury which has the power to appreciate as it pleases the facts presented, either in civil or criminal instances, though incompetent *scientifically*, has proved good in this case. A conscientious duty was performed in spite of the eloquence of the defence; the District Attorney baffled all efforts against the simple evidence of facts: that a man had been killed in a fit of frenzy and vengeance.

The honorable judge took his share in the many psychological errors of this trial; he said, for instance, that homicidal insanity is committed *without any motive*. Experience proves, very often, the reverse; and, might we not ask the learned gentleman whether it is not more rational to look, first, for proofs of insanity in the presence or absence of pathognomonic symptoms, rather than in motives which are but of secondary value?

This trial has had a favorable result for the cause of justice, ever sacred to our profession, which has maintained truth against the contempt thrown on her by ignorance; and favorable even for that unfortunate girl, whose repentance will no doubt awaken the mercy of the executive power.

Cases in Military Surgery, treated at the U. S. Military Hospital, under the charge of ALEX. B. MOTT, M.D.

CASE 1.—John H. Cornelius, Brevet 2d Lieutenant, 28th Regiment North Carolina, (prisoner of war.) Wounded at the battle of Hanover Court-House, May 27th, 1862, by a Minié ball, which entered the interior part of Scarpa's space and the anterior part of the superior third of the thigh, within three-fourths of an inch of, and external to the femoral artery, emerging posteriorly on the thigh about an inch below the point of entrance, completely fracturing the femur, and filling the track of the ball with splinters, which were extracted at the time of injury.

Upon examination, the injury proved to be a pretty extensive compound fracture. The wound healed kindly, and a large amount of callus was thrown out.

At the time of admission, June 25, the limb was shortened an inch and a half. Extension was immediately resorted to by means of the simple adhesive straps, pulley, and a fourteen-pound sand-bag; in five weeks, the limb had been extended an inch, and at the time of his exchange, August 14, he was walking about with very little appearance of the injury, the leg lacking but a quarter of an inch of its normal length.

CASE 2.—Jos. H. Sylvester, Sergeant Co. B, 2d Regiment Maine Volunteers, wounded at the battle of Hanover Court-House, May 27, 1862. The ball entered the lower third of the thigh, on the inner aspect, emerging posteriorly on the middle third, producing an oblique and longitudinal fracture of the lower third of the femur, and leaving a narrow fragment to hold the remainder of the bone together. Bandages, cold water, creosote and water, with a pad acting similarly to the double inclined plane, soon produced a reunion without shortening.

CASE 3.—Daniel Glacken, private Co. I, 73d Regiment, New York Volunteers, wounded at the battle of Williamsburg, Va., May 5, 1862. The ball entered the left inguinal region, half an inch above Poupart's ligament on the external side, and barely escaping the

femoral artery and vein. At the time of receiving the wound he was erect, in the act of making a charge upon the enemy; he instantly fell, and remained upon the field of battle five hours, when he was taken to the field hospital, where his wounds were dressed with cold water. The hæmorrhage was slight, and the ball remained in the wound. He was transported to Fortress Monroe, where he remained only a short time, coming to New York via Baltimore, where he tarried two days; upon his arrival, May 14, 1862, the wound was about an inch in length, the femoral artery pulsating on the inner edge; it was discharging freely, and was very painful, and the patient unable to move. He continued to suffer such intense pain, that it became necessary to give him sixty drops of Magendie's Solution daily. An attempt was made to probe for the ball, but without success. This state continued until the 5th of June, when it was determined to enlarge the wound on the external side and search for the ball. The patient was accordingly etherized, and the opening enlarged by about an inch. Dr. Alex. B. Mott, surgeon in charge, introduced his finger carefully, and after considerable manipulation, the ball could be detected downwards and backwards between the gluteal muscles; and the sack of the peritoneum could be distinctly felt above the finger. A pair of curved polypus forceps were introduced, and the ball extracted. It proved to be a round musket-ball; after its extraction the pain diminished and more perfect rest was obtained until June 15, when a swelling was noticed on the thigh and a large abcess formed, extending from the gluteal region to the knee, beneath the fascia lata of the thigh. Upon being opened, it discharged a large quantity of fœtid pus, which discharge continued so profuse for about forty days, that it became necessary to give syr. ferri. iodid., and stimulants, to keep up the patient's strength. August 1st, the patient seemed to improve slightly, the pain became less severe, the discharge less and more healthy, and the swelling in the hip considerably diminished. The improvement continued, and on the 15th of August he was able to walk about the ward on crutches, and by the 1st of September, could walk with very slight assistance from a cane.

Case 4.—George F. Parker, Co. —, 72d Regiment New York Volunteers, wounded at the battle of Williamsburg, Va., May 5th, 1862, by a Minié ball, the ball entering the right thigh posteriorly, while retreating from a cross-fire. After receiving the wound, he walked half a mile to the surgeon's quarters. There was but slight hæmorrhage. The wound was dressed with cold water. He entered the hospital at Fortress Monroe on the 9th of May. At this time

the wound was discharging large quantities of sanious pus, and an abscess appeared on the posterior part of the thigh, which was opened May 18th. After the escape of the pus, the opening was probed, when a foreign body was discovered. This proved to be the ball, which was extracted. A further examination detected a quantity of twilled cotton, a part of the clothes, and a large piece of knife-blade, which was carried into the wound by the ball. Upon his admission to this hospital, May 25th, 1862, the wound was in a very unhealthy condition, with a tendency to slough, and discharging large quantities of fœtid pus. The patient was emaciated, and suffering from night-sweats. He was put upon a tonic and stimulating treatment, with acids to control the sweating, and flaxseed poultices to wound. But it continued to be more unhealthy, and showed symptoms of gangrene. Poultices of flaxseed, yeast, and charcoal were applied, with ten drops of creosote to relieve the pain and check sloughing. In ten days, a large slough came away, having burrowed through the fascia lata, as well as through the muscular structure covering the bone. The wound was freely cauterized with dilute nitric acid and nit. argent., and occasionally filled with pulv. cinchonæ. The wound now began to look somewhat more healthy, and was washed daily with Labarraque's disinfecting solution, and dressed with ungt. bals. Peru. Ol. morrhuæ was given freely, and in six weeks the patient was able to walk about.

CASE 5.—George C. Flanders, Co. E, 8th Ohio Vols., wounded at Winchester, Va., March 23d, 1862. While in the act of climbing a fence, the ball entered the left leg, grazing the posterior edge of the tibia, 6½ inches below the internal condyle. Passing through the muscular tissue, it lodged in the outer side of the leg, 3 inches from the internal condyle of the tibia, and inside of the fibula, causing a slight bulging of that bone, separating the epiphysis of the tibia, and producing a compound fracture of the same at place of injury. After being wounded, he walked alone to the ambulance, which, being full, he caught a runaway horse and rode to the hospital. There was considerable hæmorrhage at the time of receiving the wound, which was not dressed until the third day after its reception. Inflammation had then set in. The leg was greatly distended, hot, and intensely painful, with violent febrile symptoms. The surgeon despaired of saving his life, and amputation was decided upon, but was postponed at the request of the patient. A large tobacco poultice was applied, and fourteen days after reception at hospital the inflammation began to subside, together with the febrile symptoms. Five days later he

was able to walk on crutches. Before leaving the hospital at Winchester, an abscess formed over the anterior aspect of the tibia, which, upon being opened, discharged fœtid pus. Upon admission to this hospital, May 10, 1862, the wound was discharging a healthy pus, and a small portion of the tibia was exfoliating. In about four weeks the abscess returned, and discharged unhealthy pus. A few days later the wound began to show signs of diseased action; granulations pale and weak; edges dull, red and ragged. This was followed by an appearance of phagedena. The orifice of the abscess, which had nearly healed, set up the same action, and rapidly spread to the size of the cyst of the abscess. The treatment, which, up to this time, had been of a simple character—ungt. Peru., with an occasional poultice—was changed to the charcoal poultice, with dilute nitric acid, to destroy the slough. Creosote, gtt. xxx., on the poultice, alone seemed to soothe the intense agony he suffered. The patient now sank rapidly from the suffering and exhausting effect of the discharge. Quin. et ferri. cit. āā. gr. iij., was given thrice daily, with as much stimulus as he would bear. Large doses of Magendie's solution of morphia were given to insure comfort. The wound increased until it acquired the size of six inches in length, by seven inches in width, barring the anterior surface of the tibia. At the end of fifteen days the patient began to improve; healthy granulations began to appear, the sloughing ceased, and the wound rapidly closed up. The anterior surface of tibia, which had remained bare, now exfoliated in large scales, showing healthy bone beneath. After the removal of the exfoliated bone, the wound closed up rapidly, and gave no further trouble.

Case 6.—George Sears, Co. H, 72d Regiment, N. Y. Vols., wounded while on picket near Fair Oaks Station, Va., June 12th, 1862. The ball entered midway between the right nipple and the median line, passed upwards, parallel to, and emerged in the middle of the left arm, on a line with the axilla. The wound was about nine inches in length, by three inches in width. The first half the distance, the ball penetrated to some considerable depth, forming a trajet, and became superficial the remainder of the distance. After receiving the wound, he walked about a mile, when he fell. There was, at this time, considerable hæmorrhage, which continued for six hours, when it ceased spontaneously.

The hæmorrhage returned slightly the next day, while on the transport, on which he was taken to Albany, N. Y., where he arrived on the 21st of June. The day following the arrival the surgeon in charge probed the wound, and laid open the trajet, at which time he

spit up several mouthfuls of blood. On the 1st of July symptoms of necrosis began to show themselves, and small pieces of bone gradually worked their way out; he was not able to assume a recumbent posture on account of great dyspnœa. On arriving at this hospital, August 2d, the wound was healing kindly, but pieces of bone still continued to come away. In three weeks after his arrival he was discharged cured.

CASE 7.—Charles Munson, private, Co. K, 2d Regiment, N. Y. S. M., while working in the trenches before Yorktown, received a shell wound in the elbow, and also a gunshot wound in the back, at the top of the sacrum. After being wounded, he was able to walk some distance. He was sent to the General Hospital at Yorktown, and while there several pieces of bone were extracted from the wound in the elbow-joint; the wound in the back gave but little trouble.

Upon arriving at this hospital, May 25th, the arm was permanently flexed, presenting at the elbow an extensive fungoid appearance—the wound being five inches in length, and three in breadth, and causing the most intense pain. The wound in the back healed kindly, giving little or no trouble. Simple water dressings were applied to the elbow-joint, but the treatment was without avail; and as the system was greatly below par, and nothing was to be gained by delay, it was decided to amputate. On the 31st of May the ordinary circular operation at the middle third of the humerus was performed. The patient appeared to do well until the 4th of June, when he complained of great pain in the knee, followed by a violent chill. Brandy, quinine, and warm applications were used to restore warmth and circulation. Another chill of less violence succeeded in the afternoon of the same day; after which, the temperature of the affected limb being slightly increased with a pulse of 140 per minute, it was thought advisable to administer the following prescription: R.—Tr. aconite, rad. gtt. xvj.; aq., ℥ij. M.—To be taken in tea-spoonful doses every second hour. In twenty-four hours the pulse had fallen to 100, when the aconite was discontinued. The temperature of the leg continued above the normal standard, with pain and excessive swelling, causing tension of the integument. It now became necessary to give twenty drops of Magendie's Solution to insure sleep. The wound in the back at this time was almost healed. Together with the chills, which had now lost somewhat of their strength, profuse perspiration at the time set in, which weakened still more his already debilitated frame.

The quinine, which he had been taking in the form of pills, was now ordered in solution, with the excess of the acid sufficient to make ten

drops to each dose, given every fourth hour. This treatment somewhat relieved him.

About two weeks after the commencement of the attack, he began to complain of his mouth, with great difficulty of deglutition. Upon examination, cancrous ulcers were found upon the tongue and mucous membrane of the mouth. Chlorate of potassa was used, but with little benefit; also sodæ biboras, with honey, and various other remedies, but all to no purpose. During the course of the disease there was a very troublesome diarrhœa, alternating with constipation. The chills continued, but were of a more feeble character. During this time, the wound from the amputation was not progressing favorably. The discharge was scanty, and the stump painful when moved. In the progress of the disease the leg became smaller, and at the time of his death assumed the normal size.

All remedies failed to afford relief, and he gradually sank, dying on the evening of June 29th, thirty-five days after admission, and thirty after the operation.

Autopsy, two hours after death. An incision was made along the course of the femoral artery, and upon coming down to the sheath of the vessels, they were found so firmly adherent that they could only be separated with the greatest difficulty. The artery was perfectly normal, and the vein greatly distended, with irregularities in its calibre at different parts; and in tracing it, only one of the smaller branches being divided, a considerable quantity of pus escaped. The greatest amount of disease was about Poupart's ligament.

On continuing the dissection beneath the vein, on the upper third of the thigh, the scalpel cut into quite a large abscess among the muscles. Upon removing the whole of the femoral and internal iliac veins, and dividing the former, a complete plug of blood and pus was found.

Considerable interest having arisen in the question as to whether the wound in the back had any connection with the venous trouble, a thorough examination revealed no such trajet of the ball. The wound in the back was no doubt produced by a piece of the same shell which caused the wound of the elbow. The kidneys and lungs were in a normal condition; the liver gave no evidence of venous trouble.

Case 8.—William Cockefair, private, Company I, 9th Regiment New York Volunteers, Hawkins' Zouaves, wounded at the battle of Camden, April 19th, 1862, by a musket-ball in the left shoulder posteriorly, about an inch and a half below the acromion process of the scapula. The wound was received whilst he was lying on his abdo-

mon, where he had just dropped to avoid a shower of grape and canister. He was able to rise immediately, take his musket, and walk to the field hospital, which was placed about two hundred yards in the rear. There was not much hæmorrhage. Two days after the action, he was anæsthetized, and the wound probed, but no ball was found. From the time he received the wound he was unable to use the injured arm, and suffered continuous pain. Cold water only was used as a dressing. On the 4th of May he was placed upon the hospital transport Eastern Queen, and arrived at this hospital on the 9th. Upon entering, the arm was firmly flexed and slung forward on the abdomen, the pulse was accelerated, and the wound discharging a fœtid and unhealthy pus. The patient continued to suffer intense pain, so that anodynes had to be freely used. As he was evidently failing, a consultation was held on the 17th of May. The patient being etherized, the opening was enlarged to admit the finger, when it was found that the head of the bone was greatly shattered; so much so, that amputation was deemed advisable. The arm was therefore amputated at the shoulder-joint on the 18th of May, by Dr. Alex. B. Mott, surgeon in charge, assisted by Dr. John J. Crane. The operation chosen was the double flap, that of Lisfranc, which is now generally adopted. There was little or no hæmorrhage, and the patient rallied well. The day following the operation, the wound discharged a large quantity of pus, and continued doing so for some time. The patient's appetite immediately improved, and his strength proportionately, so that on the fifteenth day after amputation he was able to walk about the ward, and on the twenty-first day walked out. The arm was dressed throughout entirely with dry lint. The ligatures all came away on the tenth day.

Case 9.—William Stroubel, private, Company K, 11th N. Y. Volunteers, Ellsworth's Fire Zouaves, wounded at the battle of Bull Run, July 21st, 1861. The ball entered the left leg, near the external malleolus, passing in an oblique direction, and emerging alongside of the os calcis, on its inner side; thus passing completely through the joint. After receiving the wound, he was taken prisoner, and paroled January 17th, 1862. During his confinement, an extensive carious action went on in the bones of the tarsus until several pieces of bone had to be extracted. Abscesses formed constantly until the foot was removed. Upon arriving at this hospital, May 25th, there were four fistulous openings, discharging a sanious fluid. The wound was probed a number of times, but as the foot had already been temporized with long enough, amputation was thought the best, and only treatment. Cir-

cular amputation was made about the lower third of the tibia on the 20th of June, by Dr. Alex. B. Mott, surgeon in charge, assisted by Dr. John J. Crane. The wound was closed up about two hours after amputation, and progressed well until the third day, when it began to bleed slightly, and looked inflamed and angry. It was thought best to cut the sutures, and look after the bleeding vessel. Upon opening the stump, a large clot of blood was found and removed, and the vessel tied. The stump progressed rapidly. In ten days the patient was able to get about on crutches, and in six weeks the wound was entirely healed.

Case 10.—James R. Burns, Company E, 174th Regiment New York Volunteers, wounded at Williamsburg, May 5th, the ball passing through the elbow-joint. At first the wound did well, but upon his arrival at this hospital, May 25th, was inflamed, and discharged a fœtid pus. His strength failed so rapidly that amputation was thought best, which was performed on 19th of June, by Dr. Alex. B. Mott, surgeon in charge. The *stump was left open*, and dressed throughout with dry lint. He rallied immediately, and in a month was able to get around.

Case 11.—Charles Mensch, private Company H, 33d Regiment N. Y. Volunteers, wounded in the action at Williamsburg, Va., May 5, 1862. The ball entered about four inches above the patella, passed completely through the joint, and emerged at the external side of the tibia, three inches below the lower border of the patella. The wound was received during the bayonet charge, the knee being flexed. He fired his piece several times after receiving the wound, but finally fell, and was carried to the rear, where water dressings were applied.

Upon his admission to this hospital, May 14th, the tissues of the joint were wholly destroyed, the wound discharging a thin sanious fluid, and the probe could be passed along the trajet of the ball. A consultation being held, amputation was deemed advisable; but the patient being averse to losing the limb, it was not thought dangerous to temporize. His strength, however, continued to fail, with intense and continuous pain. Longer delay was therefore deemed dangerous. Accordingly, on the 31st of May, the leg was amputated at the middle third of the thigh, by Dr. Alex. B. Mott, surgeon in charge, assisted by Dr. John J. Crane; the double flap operation being chosen. The patient bore the shock remarkably well, and rallied rapidly. The flaps were brought together by interrupted sutures, and everything went on well. On the second day the flaps seemed to have united by first intention; but on the afternoon of the seventh day, the edges of

the wound presented a thickened and livid appearance. The capillary circulation was very feeble—the adhesions and granulations could be easily broken up—the discharge was scanty, thin, and fœtid. The patient at this time was pale, with extremities cold, and a slightly accelerated pulse. Stimulants and nourishment were freely given, but with no success, as the patient sank, dying in ten hours after the first appearance of the disorder, which proved to be gangrene.

Case 12.—Alvah Cotton, private Company F, 22d Massachusetts Volunteers, wounded in action at Gaines' Hill, on the 27th day of June, 1862. The Regiment being outflanked, was forced to retreat; it was during this retreat that he received his wounds.

The first ball entered the left nates obliquely, emerging through the perineum, and passing directly through the scrotum, destroying the right testicle, and cutting off a piece from the right side of the glans penis. The second ball entered about half an inch above the styloid process of the ulna, passed through the fascia and tendons, and emerged at the metacarpo-phalangeal articulation of the thumb. After receiving these wounds, he walked about twenty rods to a log shanty, with three others. In a short time a rebel soldier came along and threatened to bayonet them; but upon his expostulating, he ordered them to the rear as prisoners. He then walked about a third of a mile to a creek, where he asked the rebel to let him drink; in striving to get some water, being fatigued by his exertions, and exhausted by the hæmorrhage from these wounds, he fell into the creek, where he remained about two hours. By this time the fighting was over, and the rebels having all they could do to look after their own wounded, they, upon his solicitation, took him out of the water and placed him upon the bank, leaving him covered with his blanket. He slept there all night, and in the morning the rebels came back, and removed him to a hospital at Gaines' Hill, where he remained about a month. He was then sent to Richmond, and from thence was sent North on parole. While in hospital at Gaines' Hill, the arm was attacked by erysipelas, which so increased that, upon his arrival at Fortress Monroe, it was deemed necessary to lay open the arm from the wrist to within an inch of the axilla, on its internal aspect. The wounds were dressed throughout with cold water, except during the attack of erysipelas, when poultices of flaxseed were used. Upon arriving at the hospital, August 1st, the wound of the scrotum had almost healed, and in fact had given very little trouble. The arm was slightly swollen, with a little appearance of erysipelas; the wound in the arm was discharging large quantities of quite healthy pus, but

was not healing. The arm began gradually to swell, and the discharge increased. His vitality, already low, became weaker daily, until it was deemed best to amputate, which operation was performed on the 16th of August, by Dr. Alex. B. Mott, surgeon in charge, assisted by Dr. John J. Crane. The circular method was chosen, and upon the incision being made, the parts were found extensively infiltrated with serum. The patient rallied well after the operation; water dressings were applied, and dry lint used for the first month, at the end of which the patient was able to walk slowly about the ward.

Translations from the German. By C. A. HARTMANN, M.D., of Cleveland, Ohio.

X.—*Talipes Varus.* By Dr. BARTSCHER, of Osnabrueck.

The difficulty in the treatment of club-foot is to keep the foot in the required direction. Neither the very serviceable apparatus of Stoess, nor the excellent machine of Stromeyer, avoid this difficulty sufficiently, and the too early application of Scarpa's shoe results in the return of the abnormal position. I have derived much advantage from an apparatus of my own invention, consisting of a brass shoe, with two splints attached to it. The shoe is made to fit the straightened foot, is well lined, and fastened by means of two straps running over the back of the foot. The splints can be made of wood or brass; they ought to cover the whole extremity like a shell,and to be so arranged as to allow flexion of the knee. Near the lower edge, each splint has several holes, to receive pegs fastened to the sole of the shoe; the most anterior of these holes is to run upwards, in a somewhat curved line, so as to allow the corresponding peg on either side to move in that direction and turn the foot upwards. The splints are kept in position by strong india-rubber bands above, and by leather straps running under the sole. On the upper end of the external splint there is a small dentated wheel, connected with a spring, by means of a catgut running over which, and fastened to the anterior point of the shoe, the flexion of the foot can be regulated.

In a short time the children are able to walk with straightened feet, in this apparatus. Gradual flexion of the feet is obtained by turning the wheel a little every day, by means of a winch, and keeping the foot in a flected position for a certain length of time.

Club-foot is usually congenital; if acquired after birth, it is either a continuance of the fœtal position of the foot, or is developed by the

attempts to walk, in consequence of laxity in the ligaments of the joints, which may be a primary defect, or result from dentition or infantile atrophy. The least frequent cause is congenital paralysis of the peroneal muscles.

Threatening inversion of the foot can be cured by proper manipulations and dressings with adhesive strips and plaster of Paris. In laxity of the capsular ligaments, I have had the best results from high shoes, strengthened on either side by triangular splints of sole-leather, so as to allow only flexion and extension of the foot, while abduction and adduction are prevented.—*Journal für Kinderkrankheiten.*

XI. *The Intestinal Croup of Children.* By Dr. Th. Clemens, of Frankfort-on-the-Main.

This disease, which our children have in common with the cow and the hog, has never yet been specified and contrasted with laryngeal croup. It is of less frequent occurrence, and not very dangerous; remaining always local, and not endangering life, unless a great portion of the intestinal mucous membrane is involved. The fibrinous exudation may be copious enough to prevent, at least in the smaller intestines, the passage of the excrements. One child rallied from a dying condition after the sudden excretion of a ball, formed mostly of pseudo-membranes. The exudation is always much more copious than in the corresponding affection of the larynx.

Symptoms.—When the smaller intestines are affected, there is always diarrhœa, and sometimes also vomiting of half-digested matters. Like croup proper, this form also arises from a preceding catarrhal affection. The well-developed disease is marked by intense fever, with nocturnal exacerbations, and great change of the features within a very short time. Depression and emaciation are inseparable from a long duration. A rapid recovery follows the removal of the false membranes, although portions of them may continue to come away for several days. The patients are soon quite lively again, and regain their appetite in a short period.

Prognosis.—There is rarely any danger, except either from obstruction of the intestinal canal by too copious exudation, or from too extensive a portion of the mucous membrane being involved. In the latter case, the interrupted chylification may destroy life, as the obstructed respiration does in laryngeal croup.

Complications.—One of the four cases observed occurred subsequently to imperfectly developed measles. Plastic exudation of the

intestinal mucous membrane probably happens frequently in this catarrhal affection.

Treatment.—Calomel in small doses, and a saturated alkaline solution. A few leeches, and a decoction of poppy-heads, if there is much pain and fever.—(*Journ. für Kinderkrankh.*)

XII.—*Scarlet Fever and its Treatment.* By Dr. A. CLEMENS, of Frankfort-on-the-Main.

The mortality and malignity of this disease seem to be due more to improper treatment than to the malady itself. In the great majority of cases the first thing exhibited should be an emetic. It has a decidedly favorable effect on the whole course of the disease, and mitigates particularly the inflammation of the throat. Emetics may also be of advantage at a later stage, when the trouble in the throat increases again, the cervical glands swell, the tongue presents a fur in the middle, while the margins are reddened and dry. For fifty years, and during three epidemics, I have never met with a malignant scarlatinous angina, and it seems to me the free use of emetics has prevented the development of that form. Even during desquamation, an emetic—ipecacuanha in that case—may be required. The indication for it is a scanty urine, a dry and hot skin, a dry tongue, swelling glands, increased pain in the throat, and sensibility of the slightly tumefied abdomen.

Purgatives are undoubtedly of great service in all forms of scarlatina. They are indicated as long as the eruption flourishes, or angina, congestion about the head, a hard and frequent pulse, dry heat of the integument, dry and furred tongue, and great thirst are present. Three or four fluid evacuations daily are sufficient. During desquamation, the bowels should also be regularly moved. In that way, the sequelæ are best prevented.

A day after the emetic, or sooner, I prescribe to children, from one to three years of age, syrup of buckthorn, a tea-spoonful every hour; to older ones, lenitive electuary, ʒvj., syrup of marshmallows, ℥ss., in the same dose; to adults, compound infusion of senna, ℥iij.–iv., tartrate of potash, ʒij.–℥ss.; a table-spoonful to be taken every hour, with syrup of raspberries, ℥j. If too many evacuations follow, the medicine is put aside for a few days, or a refrigerant given in its place, consisting of Haller's Acid Elixir, ʒss.–i., raspberry-water, ℥iv.–vi., simple syrup, ℥j.; a table-spoonful every two hours. Cold water serves for a beverage; nourishment is not required, thin water-gruel being sufficient.

A third remedy in scarlatina is the evacuation of blood. In the first stage of the disease, nothing should prevent leeching or venesection, if head and neck are prominently affected. Leeches will do for children, and should be applied near the carotids. The bleeding is best continued by a flaxseed poultice.

After the disappearance of the eruption, and before desquamation commences, it is proper to give chlorine water, to children, ʒss.–ʒij.; to adults, ʒss., in twenty-four hours. The addition of syrup decomposes the mixture, and must therefore be avoided; it may be administered in distilled water. The same treatment, with occasional intermissions, is continued during the period of desquamation. Constipation of the bowels requires a saline cathartic.

Cerebral symptoms call for the application of ice to the head, bleeding, and a blister in the neck.

The temperature of the sick-room should be kept at 15° R., and fresh air be cautiously admitted every day. Milk and water for breakfast; water-gruel, and, later, some cooked fruit constitute the diet. Cold ablutions are unnecessary, and a warm bath not sooner than one or two weeks, subsequent to the completion of the desquamatory process. During that period, the skin may be cleaned with a towel and a little warm vinegar.

Isolated sporadic cases of scarlet fever can be produced by catching cold.

The eruption is not always present, and liable to many varieties. Inflammation of the throat, intense fever, and the peculiar frequency of the pulse, are the principal symptoms. Frequently dyspnœa and slight fever, followed by constipation, scanty urine, and hydropical affections, are the only indications of the disease.

Scarlatina on the mucous membrane of the intestines is not of very rare occurrence.

The albuminuria consequent upon the disease is similar to that of Bright's disease, in not originating, like the passive forms of dropsy, from a misproportion between exhalation and resorption, or from organic diseases. The affinity of the scarlet fever contagion to the uropoietic organs remains yet to be explained. Anasarca is certainly due to a specific influence on their mucous membrane. The ammoniacal odor of the urine seems to point to an alkaline character of the contagion, and this may explain the good effects of carbonate of ammonia, acids, and chlorinated water.

Every epidemic of scarlatina is accompanied by an increased number of abortions and premature deliveries.

The appearance of scarlet fever during child-bed is a dangerous complication, on account of this specific relation of the contagion to the womb. Halm described, in 1837, the scarlatina puerperalis as differing from scarlet fever in not being contagious, appearing within three or four days after delivery, frequently not affecting the mucous membranes at all, and showing no regularity in regard to the fever and eruption. The fever comes suddenly, with a well-marked chill, and a very quick, full, hard pulse. Slight pains in the womb disappear with the coming eruption, which usually covers rapidly the greater part of the body, frequently on the second day of sickness, without mitigation of the fever. This disappears, in favorable cases, with the eruption on the third or fourth day, when desquamation follows immediately. Without any apparent cause, this may result in peritonitis, splenitis, dropsy, or pleuritis, with extensive exudation. Where no desquamation takes place, the fever goes on and mania supervenes, soon ending in death. Headache during the eruption, and pleuritis and peritonitis subsequently, are very unfavorable symptoms. The treatment must be antiphlogistic, with small doses of calomel. Ablutions with warm water, mineral acids, cold applications, leeches, according to circumstances.

With its many variations, the eruption cannot be considered as an essential symptom of scarlet fever. It may suddenly disappear, without disturbing the course of the disease.

One of the most dangerous sequelæ is dropsy. It is rather of a torpid than inflammatory character, and is successfully treated by slightly aperient, hydragogue remedies, followed by tonics. For obstinate cases, the preparations of iron are true specifics. Tinctura ferri pomata, (Ph. Boruss.,) tincture of acetate of iron, or sesquioxide of iron, may be exhibited, first with diuretics, then alone.—(*Journal für Kinderkrankheiten.*)

XIII.—*Two Methods of Lithotomy performed in the same Patient.* By Prof. GUENTNER, of Salzburg.

R. R., a miner, aged forty-one, had symptoms of lithiasis five years since. Two years ago, several small concretions were voided with the urine. Examination with the catheter proved the existence of a hard, smooth body in the left side of the bladder. After performing the lateral operation, it was found impossible to extract the same, it being fixed in and firmly surrounded by a portion of the bladder which could not be reached. The patient made a rapid recovery, with the stone remaining in its place. Only a small part of it had been crushed

with great exertion. A very annoying enuresis followed in a short time, with increase of the other troubles. Five weeks after the first operation, the high operation was executed. With some difficulty the concretion could now be removed; it formed a stone of an oblong shape, two inches nine lines long, and nearly two inches broad, weighing a little over three ounces, and consisting principally of uric acid. Some inflammation followed, but in eight days all the organs had resumed their normal functions; on the ninth day, the urine commenced to pass through the urethra; after the fifteenth not a drop of it appeared in the wound. Recovery, however, was slow this time, and it took sixty-four days to heal the external wound. Finally, however, the case terminated in complete recovery.—(*Wiener Medizinische Wochenschrift.*)

QUARTERLY REPORTS ON MEDICAL PROGRESS.

REPORT ON THE THEORY AND PRACTICE OF MEDICINE.

By MARK BLUMENTHAL, M.D.

I. *Efficacy of Veratria in Articular Rheumatism.* By M. BOUCHUT. (Dublin Medical Press.)

II. *Treatment of Acute Inflammatory Rheumatism by Venesection.* By Prof. PIORRY. (Gazette des Hôpitaux and Lancet, 1862.)

III. *Treatment of Acute Inflammatory Rheumatism.* By Dr. THOMAS K. CHAMBERS. (Lancet, November, 1862.)

IV. *The Supra-Renal Capsules—their Anatomy and Pathology.* By Prof. HARLEY. (Lancet, November, 1862.)

V. *The Value of Urinary Analysis in the Diagnosis and Treatment of Liver Diseases.* By Dr. HARLEY. (Lancet, November, 1862.)

VI. *On the Treatment of Pneumonia.* By Prof. JAMES H. BENNETT. (Lancet, November, 1862.)

VII. *On the Value of the Expectant Mode of Treatment in Pneumonia of Children.* By Dr. BARTHEZ. (British and Foreign Med.-Chir., Nov., 1862, from Bull. Gén'l Thérapeut.)

VIII. *On the Treatment of Peritonitis by the Continuous Application of Cold to Abdomen.* By M. BEHIER. (British and Foreign Med.-Chir. Review.)

I. Veratria, already found of such great advantage in febrile and inflammatory diseases of various kinds, and likewise in so many diseases of infancy, is now again particularly lauded in acute inflammatory rheumatism. M. Bouchut relates (*Journ. de Méd. et de Chir.*) the case of a little girl aged twelve years, who suffered a most severe attack, the pains occupying the feet, knees and hips. On ausculta-

tion of the heart, systolic souffle was detected; the pulse was irregular, intermitting and frequent, (120;) the rheumatic affection involved, therefore, at the same time, the serous and muscular structures of the heart. M. Bouchut here employed veratria, guarded by opium, in order to make it more acceptable to the stomach. His favorite formula is to have one grain each of veratria and opium, made into ten pills, silvered over. One of the pills is given night and morning, on the first day, and the dose is increased by one pill every day, unless colics or vomiting supervene. The colics may in general be prevented by emollient enemas; but, should any untoward accidents occur notwithstanding this precaution, the medicine should be provisionally discontinued, or the dose for a few days decreased.

The first effect of the medicine is to abate the quickness of the pulse; and, as an arterial sedative, veratria is certainly superior to digitalis. In the course of a week, in the case above referred to, the pulse fell from 120 to 60—56 and 52. The pain at the same time subsided, and the swelling and redness disappeared. These effects were produced in less than a week, and merely by the exhibition of twenty pills, or two grains of veratria.

This, it appears, (*Dublin Medical Press, August* 13, 1862,) is the thirtieth case in illustration of the efficacy of this remedy M. Bouchut has met with in his practice, and is, therefore, especially deserving of notice. Sulphate of quinine may be as efficacious as veratria in the treatment of rheumatic fever, but the latter drug is less expensive, and less liable to induce complications. Sulphate of quinine has a tendency to induce cerebral metastasis; but were it only open to the objection of causing deafness, and, perhaps, amaurosis, this would be amply sufficient to justify a preference for veratria—a medicine easy of management, of insignificant pecuniary value, and any unfavorable action of which can easily be checked or averted.

II. The *Gazette des Hôpitaux*, August 23, 1862, contains an interesting case of a young man suffering from inflammatory rheumatism, admitted into La Charité, under the care of the celebrated Piorry. The joints most intensely affected were the right carpo-radial and tibio-tarsal, and both femoro-tibial; no effusion was found in these articulations; the tumefaction was considerable, the pain very great, and the heat extreme; the pulse full, strong, and bounding; the face and lips red, the tongue whitish; in fine, he presented all the symptoms of the inflammatory fevers of the authors. There was no cardiac complication, nor was any other organ found diseased. A venesection of nearly thirty-eight ounces was made. The blood presented

a consistent clot, but no buffy coat, although the bleeding had been made from a large opening.

On the day of the bleeding but little improvement was felt, but the day thereafter the symptoms diminished, and then ceased entirely. Since then the patient has not suffered in any way, nor have any cardiac complications occurred.

It is rare, indeed, to see the symptoms of acute inflammatory rheumatism disappear so suddenly after venesection, but it is to be remembered that in this case hæmitis (excess of fibrin in blood) did not exist; and it is probably owing to this fact that the wonderful effect is to be ascribed.

"As regards a similar case," said M. Piorry, "which may present itself, it is important to determine beforehand if fibrin be held in suspension by the serum; unfortunately, this case proves that it is all but impossible to determine this before a bleeding, attended, as it was, by the signs of hæmitis, and yet this found *not* to exist. It was simply a case of blood plethora. At any rate, the history again proves the utility of bleeding in acute articular rheumatism."

III. Dr. Thos. K. Chambers, of St. Mary's Hospital, London, (*Lancet*, November, 1862,) gives the following method of treatment in acute inflammatory rheumatism, which recommends itself, not alone by the authority from whence it emanates, but equally so by its exceeding rationality, practicability and results. It were well, indeed, for our art, and better still for suffering humanity, if in all diseases we could so well reconcile theory and practice; if in the treatment of all we could always follow indications so well marked; and it is with this conviction of the great practical utility of Dr. Chambers' method, that we transcribe his rules, in the perfect assurance that, if followed by our readers, they will contribute much to the alleviation of pain, and the prevention of evil secondary effects, so often finally fatal. He says:

1. "The patients are bedded in a peculiar fashion. All linen is strictly forbidden to touch the skin; a slight calico shirt or shift may be allowed; but if they possess under-clothing only of the prohibited kind, they are better naked. Sheets are removed, and the body carefully wrapped in blankets, which are so arranged as to shut off all accidental draughts from the head. The newest and fluffiest blankets that can be got are used. The bed-clothes being put so, are kept so, and students are warned that when they listen to the sounds of the heart, they must not throw open the blankets, but insert their stethoscope (first warmed) between the folds.

2. The limbs, which are swollen, red, or painful, are wrapped up in flannels, soaked with a hot fomentation, consisting of decoction of poppy-heads, with half an ounce of carbonate of soda to each pint.

3. The following drugs are prescribed with a curative intention:

a. If the skin is red, swollen, and painful about the joints; if the cellular tissue around the muscles is infiltrated and sensitive, so that motion is impossible, or exquisitely painful—more especially if these phenomena are metastatic, leaving one part free and attacking another —then they get the alkaline treatment pure and simple; they have a scruple of bicarbonate of potash in camphor-water every other hour, night and day, when awake.

b. If the above-named phenomena are insignificant, and the pain is felt more in the bones,—if it is intensified rather by pressure, than by motion,—if it is fixed in one spot, and not metastatic, then I add two grains of iodide of potassium to each dose; and directly the symptoms have taken a turn towards alleviation, I leave off the alkali altogether, and give only the iodide.

4. Opium, as a palliative, is given in exact proportion to the degree of subjective sensation of pain. If one grain be not enough to entice sleep, a grain and a half is administered; if that do not avail, two grains. Directly the pain is better, the quantity of the drug is diminished. Nothing effects the desired object so well as pure opium.

5. If the pain remains fixed in one joint, instead of leaving it, as in other places, leeches are applied there, and the part is kept poulticed. When we can get them, young laurel leaves, bruised, are mixed with the poultice.

6. The latter statement is applicable also to the cardiac region, if the heart has become inflamed, either inside or out. The pain is taken as an indication of the extent to which the leeching is to be pushed, so soon as it is proved by auscultation that such pain arises from inflammation of the heart, and not from rheumatism of the pectoral muscles. The constant application of the poultice is made imperative.

7. The diet is varied in some degree, according to the antecedent circumstances of the patients. If they have been robust, hearty persons, before the attack, they will bear a good deal of starvation, and they are put on our "simple diet," to wit: bread and butter, gruel and tea, in quantities practically at discretion. If previously they have been ill-nourished, by reason of either ill-health or poverty, a pint of broth or beef-tea is added." In commenting upon these several items, the author enforces their utility by many reasons, and the

results of experience, and in regard to the temperature, declares that "it is impossible to exaggerate the importance of extreme repose, and an even, high temperature to the skin, in rheumatic fever. *It is worth all the other means put together.*" Since especial regard has been paid to this point, but *one* case of pericarditis occurred during eight or nine years, and that was doubtless "owing to exposure while taking mercury and opium."

"Rheumatic inflammation," says Dr. Chambers, "is an injury to nutrition, which is entirely compensated for by restored function." If kept perfectly still, it passes away, and leaves no after-sign, wound, or scar. But if, from ignorance or necessity, the parts are kept in motion, common inflammation is superadded. The pain and swelling become fixed, and no metastasis can take place. "The pain of rheumatism is a call to voluntary—absolute rest." Now in joints this is easily obtained, but with the heart it is different; this organ must be kept beating, at whatever cost, and the heart, accordingly, is well known to be fatally apt to be struck with common fibrinous inflammation, at all stages of the disease. Absolute rest being inconsistent with the continuance of life, it is desirable to make the nearest possible approach thereto. Simple rest and horizontal posture are not sufficient to this end; but an *even, high temperature are absolutely essential.* "Next to jumping and running, there is nothing gives the heart more work to do, than change of temperature." In proof of this, Dr. Chambers refers to the fact, that the accoucheur stimulates the heart's action, in asphyxiated or still-born infants *most*—by causing sudden changes of temperature—dashing cold water upon, and rubbing with dry, warm cloths, alternately the chest and neck, as the parts most powerfully sensitive to the changes. Now, what the accoucheur so much desires—the physician in treating rheumatic fever should be most anxious to avoid, namely—increased heart action, as this would tend to produce common inflammation, superadded to the rheumatic, and all the train of symptoms accompanying the cardiac complication.

The greatest caution should be used, in making the necessary stethoscopic examinations, not to expose the chest by forming the blanket into a tube and inserting the stethoscope, previously warmed through it. "As a student, I used to see many and many a case of pericarditis brought on by the careless way in which the chest was exposed in the daily stethoscopic examination."

The danger of having linen or cotton bed-clothes, which become saturated with perspiration, and then by exposure get cold and chill

the skin, is also forcibly expressed, and a case adduced, in which relapse of the disease occurred during convalescence, followed by pericarditis.

With unimportant exceptions, Dr. Chambers has for the last seven years treated every patient on the alkaline plan, and, in the majority of cases, rapid relief begins with the commencement of the treatment; in a certain number, however, no effect is produced, even when the urine has been made alkaline. Some of these are gouty; a few, gonorrhœal rheumatism; "a disease allied to pyæmia, and requiring quite different treatment." Still, there are some cases where true rheumatic inflammation will not yield to the alkalies, and in these you will find the periosteum or perichondrium affected. Iodide of potassium is here to be substituted. Opium is used simply as an anæsthetic, and "there is no reason to suppose it either shortens or lengthens the disease." Leeches and poultices are demanded where common inflammation has supervened, and are particularly valuable in commencing cardiac complication. "From six to twelve leeches are applied at once; these usually relieve the pain somewhat, but if it returns again next day, they are freely repeated, again and again. The pain is the best indication of the acuteness of inflammation in serous membranes, and as long as acute inflammation lasts, leeches and poultices are the best remedies for it." The alkaline treatment is vigorously continued in this complication, and while "no advantage has been traced to mercury in this stage, opium is very proper in full doses, as it tends to control and lower the hurry of the circulation, which is so dangerous. Under its use, the pulse is diminished in frequency, sometimes even below the normal standard; and this must surely be an important object in a state induced by the continuous motion of the organ." Indeed, I am not sure that mercury does not dispose to pericarditis, by increasing the proportion of fibrin to the other constituents of the blood, "and is therefore contra-indicated."

The importance of instant action, whenever an abnormal murmur arouses suspicions, is forcibly impressed. "Lost minutes are more hurtful here than in any disease I know of." "It is better even to anticipate evil, than to be too late." Leeches or cups should alone be employed, to prevent, or at least diminish, the consequences of the inflammation.

With regard to diet, it is considered necessary to restrict the supply of nutriment. Meat especially seems to disagree, and its indulgence may produce a relapse. Vegetable food is less dangerous; rice

pudding, porridge, gruel, bread, mashed potatoes, and so on, are recommended.

IV. Prof. Harley, of University College, London, has just made a valuable contribution to Medical Science by his Prize Essay "On the Anatomy and Physiology of the Supra-renal Capsules. As embodying all that is at present known regarding these organs, *The Lancet* (Am. Ed., Nov., '62,) gives the following summary:

1. The supra-renal capsules are not fœtal organs, but perform their function up to the latest period of life.

2. The supra-renal capsules are not absolutely essential to life. When removed artificially, or destroyed by disease, their function is vicariously performed by other "ductless glands," more especially by the thymus.

3. Young animals support the removal of the supra-renal capsules better than old ones, (probably on account of the greater activity of the thymus in early life)

4. When only one capsule is extirpated, the other performs the double function.

5. A wounded capsule heals readily.

6. The supra-renal capsules are not marked by any great sensibility.

7. The removal of the right is more frequently attended with fatal results than removal of the left. The right is also much more liable to disease than the left. (Appendix.)

8. The lower animals are subject to disease of the supra-renal capsules.

9. When death follows upon the extirpation of the supra-renal capsules, in the majority of cases, it is in consequence of the injury done to their solar plexus.

10. The supra-renal capsules are richly supplied by blood-vessels as well as by nerves.

11. Their function is apparently intimately connected with the formation of the *red* blood-corpuscles.

The following conclusions are then drawn from a number of tables:

1st. That supra-renal capsular disease is two times and a half more frequent in males than in females.

2d. That it occurs with equal frequency above and below the age of thirty-five (35) years.

3d. That both capsules are (four times) more liable to be affected than only one.

4th. That the right capsule is much more liable (three times) to become diseased than the left.

5th. In diseased supra-renal capsules,

40 per cent. are affected with tubercle.
20 " " " cancer.
12 " " " fatty deposit.
12 " " " calcareous deposit.

6th. Males are more liable to be affected with bronzed skin (either with or without supra-renal capsular disease) than females, the proportion being as 3 to 1.

V. As a most interesting fact demonstrating the importance and never-to-be-overestimated advantages conferred upon medical diagnosis by the microscope, may be mentioned its use in obscure liver disease. Thanks to the untiring and profound researches of German and other pathologists, two diseases—one of them *always*, and the other very often, involved in doubt—have been rendered easier and more positive of diagnosis. Professor Harley, of Univ. Coll., London, says: "Every one must have met with cases of obscure hepatic disease, where the ordinary means of research (obtaining the size of liver by percussion, the absence of bile in stools, and the presence of biliary pigment in urine,) proved totally inadequate to their requirements. This circumstance has led to the search of further aids to diagnosis in such cases; and consequently, for the last few years valuable suggestions have fallen from different members of the profession both here and abroad. For example, Dr. Eiselt, of Prague, has called attention to the fact that in cases of melanotic cancer of the liver, the true nature of the affection may be sometimes discovered during life, by the presence of melanine in the patient's urine." (A specimen was shown by Dr. Harley.) "Urine containing melanine, although of the normal color when first passed, gradually becomes of a dark hue, even as dark as porter, when left for some hours exposed to the air. This change appears to be owing to a slow oxydation of the pigment."

In the second place, Dr. Frerichs states that two substances, tyrosine and leucine, which were formerly only known to the scientific chemist, are invariably to be found in the urine of patients laboring under acute or yellow atrophy of the liver. Dr. Harley had been able to verify this statement in the urine of a young married woman who died from this most fatal form of disease. He had also seen a case of chronic atrophy of the liver, the result of obstruction from disease of the pancreas, in the urine of which he found both tyrosine

and leucine. As the disease advanced, the quantity of these abnormal ingredients increased. After death, crystals of tyrosine were found in the liver.

Dr. H. recommended that, in all cases of obscure liver disease, these substances should be looked for; and that, in the majority of cases, they were readily detected in the concentrated urine by the microscope. Tyrosine appears as needles and little stars; the leucine as round, yellow balls, some of which are occasionally spiculated.

Dr. Harley's method of distinguishing between jaundice arising from suppression, and jaundice the result of obstruction—two forms of disease so ably described by Dr. Budd—was then alluded to. Dr. H. believes that, in determining the presence of biliary acids in the urine in liver disease, sufficient attention had not been paid to the *kind* of jaundice under which the patient suffered. He believed that where bile acids occurred in the urine in any quantity, their presence might be regarded as the certain sign of some obstruction in the course, or at the termination, of the common bile-duct. His test for the bile acids is very simple, and consists in adding strong sulphuric acid and a small piece of white sugar to urine. The sulphuric acid is so added as not to mix with the urine; the sugar floated at their line of contact, and after some minutes assumed a purple hue. If no bile acids exist, the sugar is simply browned.—(*Am. Ed. Lancet*, Nov., 1862.)

Dr. Thudicum mentions another excellent test, which consists in adding a drachm of the solution of the nitrate of mercury to the urine; the urine being then boiled, the white precipitate produced would be transformed into a dark purple color, and the solution itself would assume a partly purple color.

VI. The treatment of inflammations and fevers of the present day, as compared with that pursued twenty years ago, has certainly undergone a most wonderful change. From the too energetic and active remedies then universally employed, the profession has receded completely, and now threatens to go to an equal extreme in the opposite direction. In no inflammatory disease has this change of practice become more marked and prevalent than in pneumonia, which, from being actively met in by-gone years by the entire army of antiphlogistics, that is to say, blood-letting, purgatives, antimonials, mercury and low diet, is now looked upon as best treated when least medicated, and most tenderly nursed. Among the eminent men who have insisted upon the abolition of the old practice, none stand out more boldly than Prof. Skoda, of Vienna, and Prof. J. Hughes Bennett, of

Edinburgh. "It was about eighteen years ago," says Dr. Bennett, "in consequence of investigating the pathology of inflammation, that I began to doubt the propriety of such a treatment, and for the following reasons: In the first place, the cause of the inflammation is an irritation of the textures, of the ultimate molecules of the part, in consequence of which, their vital power of selection is destroyed, and that of their attraction is increased. The removal of blood by venesection cannot alter this state of matters, neither can other lowering remedies. If the inflammation be superficial and limited, local bleeding may diminish the congestion, as in conjunctivitis; but if exudation has occurred, it cannot remove that.

In the second place, an exudation or true inflammation having occurred, it can only be absorbed by undergoing cell-transformation. Now this demands vital force or strength, and is arrested by weakness. Inflammations in healthy men rapidly go through their natural progress. In weak persons they are delayed or arrested, hence their fatality.

In the third place, the strong pulse, fever, and increased flow of blood in the neighborhood of inflamed parts, have been wrongly interpreted by practitioners. They are the results and not the causes of inflammation, and show that the economy is actively at work repairing the injury. So far, then, from being interfered with and interrupted, they should be supported by nutrients.

It follows, fourthly, that if these views be correct, the true treatment of inflammation should be directed towards bringing the disease to a favorable conclusion, by supporting rather than by diminishing, the vital strength of the economy; and this not by over-stimulation, as was done by Dr. Todd, but simply by attending to all those circumstances which restore the nutritive processes to a healthy condition.

Since fourteen years, Dr. Bennett's practice has been guided by these views, (which have already been, to a very general extent, adopted by the profession,) and he now brings forward 105 cases of pneumonia, treated by him in the Royal Infirmary of Edinburgh, and of which accurate records were kept by the several Clinical Clerks. The results were:

Single uncomplicated cases	58	Average duration	13½ days.
Double " "	19	" "	20 "
Complicated cases	17	" "	15¾ "
Unsatisfactory cases (as to duration)	8		
Deaths	3		
	105		

Ratio of deaths, 1 in 35. Average residence in the hospital of 77 uncomplicated cases of pneumonia, (single and double,) $22\frac{1}{8}$ days.

"In all these cases the treatment was directed to the support of the economy, *never* to weaken it by antiphlogistics. At the same time, if dyspnœa be urgent, cupping or a small bleeding (from 4 to 8 oz.) may be practiced as a palliative, more especially in bronchial or cardiac complications; although in *none* of these cases was such bleeding ever found necessary by him. During the febrile excitement, mild salines are ordered. On the fourth or fifth days, when the fever abates, good beef-tea and nutrients are administered; and on the pulse becoming soft or weak, from four to eight ounces of wine daily. As the period of crisis approaches, slight diuretics are given, to favor the excretory process."

From the facts above given, Dr. Bennett concludes:

1. That simple pneumonia, if treated so as to support instead of lower the nutritive processes, so far from being a fatal disease, almost invariably recovers.

2. That the cause of mortality in these cases is exhaustion either before they come under medical supervision, or, as formerly practiced, by a lowering treatment. Bleeding or other remedies, that do not exhaust, must be regarded as palliative rather than curative, and their influence has yet to be determined with exactitude.

3. That the same rule applies to all inflammations, the amount of danger being in direct ratio to the weakness of the system, the existence of complications in other viscera, or blood-poisoning.

Prof. Bennett does not believe that the above-stated results depend upon a change in the type of disease, or in a change of the nature of inflammation, or of the force of the pulse in man and animals; of an alteration in diet or drink; or that they were the effect of chance, but simply and solely ascribable to an advance in medical science." "He thought it strange that some minds would rather ascribe so manifest an improvement in the treatment of disease to hypothetical revolutions in nature, which had no proof in their support, than to the increase of knowledge amongst the profession, which is obvious to all."—(*Lancet*, Am. Ed., Nov., 1862.)

VII. In consequence of the mild nature of simple pneumonia, MM. Rilliet and Barthez, together with M. Legendre, have been in the habit of leaving the disease, in many cases, to its natural course. They believed that they would thus cure patients as well as by active treatment, and the results have justified their expectations. From August, 1854, to June, 1861—nearly seven years—M. Barthez has

treated in the hospital 212 children with simple pneumonia, among whom he had but two deaths, and in these both lungs were affected. In half of these cases no active treatment was adopted; in many of the others only mild measures were recommended—such as an aperient, an emetic, and a bath; and about a sixth of the cases were subjected to somewhat active treatment. To this considerable number, M. Barthez adds several more, treated in private practice; so that he thinks he can determine the mildness of uncomplicated pneumonia in children, so far as the City of Paris is concerned, whatever may be the seasons, or years, or seat and extent of disease, and whatever the treatment, active, insignificant, or none at all. He makes a reservation, however, for double pneumonia, which is the only form he has seen terminate in death, in the proportion of 2 to 13. The patients particularly alluded to by M. Barthez were from 2 to 15 years of age. Before this latter age, simple hepatization is still most frequently cured, even when it is very extensive; but it has also been known to terminate in death. After 15 years and up to 20, M. Barthez also believes in the cure of the disease, so far as his recollection extends. On the other hand, the pneumonia he describes does not comprise all the inflammatory diseases of the lung, or the pneumonia which supervenes during the course of fevers, or that which accompanies tuberculosis.

The following are some of the general conclusions at which M. Barthez has arrived: "Pneumonia, when left to itself, begins to terminate in resolution from the sixth to the eighth day from its commencement, and a slight course of treatment makes no difference in its progress. Bleeding appears to be contra-indicated in this disease, and M. Barthez has remarked that several children who had lost blood were pale and emaciated during the whole period of a long convalescence. When resolution has once commenced, the disease is very rapidly terminated, and one day is sometimes sufficient for the purpose; but more generally it occupies from two to six days. The extent of the inflammation has great influence on the duration of the disease; thus, when it occupies the whole of the organ its progress is the most slow, and its duration the longest. All double pneumonia takes more time to resolve than the simple form. The conclusion which seems to M. Barthez to follow from his cases is, that in a child attacked by simple lobular hepatization, the best course is to adopt good hygienic measures, and to abstain from all active treatment, and especially from the repeated abstraction of blood, the evident effect of which is to weaken

the patients unnecessarily, and considerably to protract their convalescence."

VIII. M. Behier, in a communication made to the Académie Impériale de Médicine, recommends the application of cold in cases of peritonitis. He relates several cases of metritis and metro-peritonitis, which he has seen rapidly cured by the continued irrigations of cold water on the abdomen. M. Behier, for this purpose, makes use of bladders of caoutchouc, filled with pounded ice, renewed every two hours. The first effect of this measure is the rapid diminution of Since October, 1858, 801 women have been confined at the Hôpital pain, which does not return unless the application of cold is interrupted. Beaujon, and of this number ice was applied in 355, of whom 244 presented only at the time of the application a swelling of the appendages of the uterus and light pain, which rapidly disappeared; in 68 others, the symptoms were more threatening, and there was a well-marked feverish excitement. Thirty-nine women died out of the whole number of those who were confined; but even in these cases there was some modification of the symptoms, for the duration of the disease was prolonged beyond that which it presented before the adoption of this mode of treatment. M. Behier therefore hopes that the plan may prove useful in the peritoneal inflammation of child-bed; and he adds, that he has never observed any bad symptoms to result from this application, which interrupts neither the lochial secretion, nor that of the milk.

The Italian Campaign of 1859—*Medico-Chirurgical Letters from General Head-Quarters.* By Dr. A. Bertherand, Principal Medical Officer of the First Class, etc., etc. Translated for the American Medical Monthly.

LETTER VI.

Volta—Valeggio—Dezenzano—The Pellagra—Tetanus—The Curare.

To Dr. J. Ehrmann:

My Dear Friend—After a stay of forty-eight hours on the heights which overlook the little city of Volta, the time-stained walls of its dismantled fortifications, and the bell-tower of its *Parish Church*—whence one may see in the distance the four corner citadels of the famous *Quadrilateral*—our General Staff at last started on the road towards the Mincio. We crossed the river, narrow, but swift and deep, on the morning of July 11th, over flying arches of boats and trestles, at Borghetto, just at the foot of the majestic ruins of an old

fortified bridge, which, in former days, defended this outlet of the valley, linking together the dungeon-keeps which sat proudly upon its scarped banks.

Borghetto, deserted and half in ashes, has been a second time ruined by the cruel treatment to which the rage of the routed Austrians has subjected it. Ten minutes farther, and a tolerably steep ascent brought us up to Valeggio.

We left only a few stragglers at Volta, as there was no hospital there except an old convent, which has been appropriated for the last few years for the lodgment of troops. After Solferino and Cavriana, the enemy, flying precipitately, had abandoned about three hundred and fifty of his wounded in these *Fatti* barracks, and we were obliged to establish a temporary medical service there under the direction of Assistant-Surgeon Major Widal, to afford assistance to these unfortunate men, as well as any of our own who might be foot-sore, or attacked with fever. These barracks are also at our disposal for the reception of patients whom the cantonment of large numbers of troops will necessarily concentrate in this neighborhood. None can foresee what occurrences the armistice may have in store for the French army. Even more poorly supplied than Volta, Valeggio has nothing but an insignificant *relief station*. The name of hospital can scarcely be given to a dozen mean beds standing in the lower rooms of a miserable hovel, reached by descending a number of steps into a subterranean basement.

The municipal authorities have, it is true, placed at the disposal of our ambulances the Church of San Rocco, an Oratory, and a good-sized house adjoining. But these places are difficult of access, and destitute of water and outhouses. We shall do well to transport our wounded, in a few days, from San Rocco to Borghetto. In that town there stands just opposite the head of the bridge, on the Valeggio side, a large four-story mansion, an old convent or seminary, which promises room for two hundred and fifty patients, while the chapel, still used for worship, might hold a hundred more. There are extensive sheds connected with it, and the Mincio is close at hand. Unfortunately all this establishment was in a most dilapidated condition, and principal Medical Director Leuret, who had been sent from Castiglione to take charge of affairs at Borghetto, may think himself happy that he has not been obliged to perfect so unpromising an organization.

The armistice of Villafranca and the preliminaries of peace having removed all pretext for hostile collisions, have left no subjects for sur-

gical treatment, save a series of serious accidents which have accumulated under our very eyes during the past few days from the most inconceivable carelessness. In one case, an artilleryman playing with a comrade, was tripped up and fell directly under the train of his caisson. By a happy providence, the driver stopped his horses in time to prevent the wheel from passing over the limb. But the femur was already broken; the fracture was fortunately a simple one, and surgical assistance at hand. In another, a Voltigeur of the Guard cocked a pistol, by a blow of his fist, and without stopping to find out whether it was loaded, pulled the trigger, with the muzzle pointed towards his right hand. The weapon went off, and the ball ploughed along under the skin the whole length of the cubital border, from the pisiform bone to the first phalangeal articulation of the little finger, without injuring a single bone. On the way to Volta, a soldier of the 56th line regiment took it into his head to set fire to an Austrian shell with a chemical match. The projectile burst in the midst of the train behind us, killing the rash experimenter a few steps from M. Malaret, Adjutant Administrator of our ambulance.

I do not know whether I have described, in a former letter, the wound of a sapper of the Engineer Corps, whose hand was torn in a horrible manner by the explosion of a shell, which he unfortunately undertook to break with a hammer, in order to "see how it was made inside." It is impossible to give you an idea of the laceration of the fingers and the three last metacarpal bones. Suffice it to say that they hung to the palm only by shreds of skin; the first and second were somewhat more adherent, although dislocated upon the trapezius and trapezoid. It was, however, so important not to deprive the limb of all means of prehension, that I did not hesitate to preserve this thumb and index finger, bad as they were, as a sort of sentient forceps, which might hereafter do the poor cripple good service. The three last fingers were then cut off, as well as the base of the *os magnum*, which was found to be involved in the injury. I replaced the two first metacarpals as nearly as possible *in situ* on the *carpus*. Making the most of the strips of skin, and uniting them by interrupted sutures, the whole was brought into shape. The hand was elevated upon a *dressing pallet*, and subjected to continuous cold irrigation. At the expiration of three days he was sent on to Brescia, where the progress of the case continued satisfactory up to the 12th of July, at which time I ceased to have any news of it.

Certainly, my dear Ehrmann, this was a case in which authority could have been found for disarticulating the wrist; so, you see, our

military surgery is not so ready with the knife as is the fashion to accuse it of being.

During the days of the 5th, 6th, and 7th, the heat of the atmosphere became really insupportable, causing a great number of entries at the hospital. The 5th Corps, which was to rally on Valeggio, lost thirty men on this terrible march, from the effects of the scorching sun. Nor were the privates, bending under the weight of knapsack, rations, gun, and cartridges, alone affected. A superior officer fell dead from his saddle, from congestion of the brain. At Valeggio, where the army was at rest, the want of occupation gave to the troops an opportunity to drink to excess of the miry water of the city wells, and the melted ice of the Mincio. Hence, gastric disorders, diarrhœa, and dysentery; the last, sometimes, of a grave form. To these we must add a number of individuals who were drowned, either from not knowing how to swim, swept away by the rapidity of the current and the eddies, or overcome by the cold, asphyxiated after a too abrupt or too prolonged immersion. It was with a feeling of extreme satisfaction that, on the 12th of July, we left the bivouacs of Valeggio in order to take up our quarters at Dezenzano, on the shores of Lake Guardo. The neighborhood of the mountains, and the presence of a large sheet of water, promised us a fresher air, and resources for both lodging and subsistence, of which we had been completely deprived for the last fortnight. The march along the Mincio to Mozembano was a gay one.

Turning here abruptly to the left, in order to reach the lake by way of Pozzolango and Revoltella, we could scarcely withdraw our eyes from the columns of smoke, which, rising above the yellow summits of the bastions, pointed out to us the fortified camp of Peschera. A mile or two further on, fresh mounds of earth, sprinkled with lime, upon the battle-field of the Piedmontese Army, again set us to thinking. Cavriana, Solferino, San Martino! souvenirs ye are, indeed, of glory and honor, but what irreparable sacrifices do ye bring to mind!

The Sardinian Army still counts nearly three hundred in the little hospital of Dezenzano, and its various dependencies. These are the wounded, whose injuries were too severe to admit of their being sent on to Brescia. Their condition is generally pretty good, although evidencing a chloro-anæmic character, which struck me as much in their general expression as in the somewhat doubtful appearance of the wounds. The Piedmontese soldiers, recruited at a younger age than our own, previously reduced by a less substantial diet, and less accus-

tomed to war, necessarily suffered more than they, from the labors of so rapid and so vigorous a campaign. On the 14th of July, a proclamation from the Emperor of the French announced to the army the termination of its operations, and the commencement of its retreat to the interior of Lombardy. The day following, the General Head-Quarters were fixed at Brescia. Brescia, the principal point to which the wounded of the two allied armies were sent after Solferino, contained, on the 15th of July, 6,577 sick or wounded, distributed by nationality as follows: 2,830 Piedmontese, 3,172 French, and 575 Austrians. This immense total, which, indeed, had been on preceding days carried up to 8,000, had necessitated the occupation of all the available houses of any size in the city, to the number of thirty-nine, including colleges, schools, churches, and a goodly number of private mansions. Hence resulted a little crowding, especially in the churches, and in one ward of the civil hospital, where twenty patients were found packed together, some of them cases of amputation. The wounded were not the only ones to suffer from this state of things. We noticed, in the fever patients, a decided tendency to aggravation of the intestinal affections; and the words *typhus* and *hospital gangrene*, imprudently spread by alarmists, aroused apprehensions, which reached even to Milan.

In his extreme and constant anxiety for the troops which had just been placed under his command, his Excellency, Marshal Vaillant, thought it his duty to confer upon the subject with the Medical Inspector, M. Larrey.

I had just reached the General Head-Quarters when this excitement broke out. At the request of our honored Surgeon-in-Chief, I returned to Brescia. Visiting the hospitals, I collected myself, and with the assistance of my colleagues, MM. Isnard and Goze, all the documents which could aid me in forming an opinion, and addressed without delay to the authorities a report which gave to the facts their true signification. There had not been a trace of hospital gangrene, and as for the intestinal complications, the whole narrowed down to a few cases of saburral condition of the digestive passages, with a little general prostration, entirely natural in men fatigued by the campaign, whose energies and elasticity had just been relaxed by the proclamation of peace, and more than all, who had been completely used up by the overwhelming heat of the past fortnight.

Being more at leisure than during my former sojourns at Brescia, I resolved not to lose the opportunity of inquiring into a disease which is more particularly confined to this corner of Lombardy. I

refer to the pellagra, that affection which, so obscure in its mode of progress, its causes and its origin, attacks each year not less than *twelve thousand* of the peasantry of Upper Italy, and whose mysterious history, in Europe, dates back only to the last few years of the past century. I certainly consider it by no means the least of my good fortune, in a medical way, in this glorious campaign, to have been able to observe, *with my own eyes*, the cutaneous eruption of the *Mal de la Rosa*, the indefinable sensation at the outset of the *Scotlatura di Sole*, and the capricious desquamation and colorless and deeply depressed cicatrization which characterize the concluding period of the disease.

An eye-witness to the digestive and nutritive disorders of the *scorbuto alpino*, of those invariable disturbances of the nervous system which pass successively from melancholy to delirium, imbecility, and suicide by drowning, (idromania,) I have come to understand the despair of science in its contest with the unconquerable difficulties of a pitiless disease.

It is a sad avowal, that despite the works of the Strambios, the Ballardini, the Franks, and the Briere de Boismonts, careful and sagacious observers, indefatigable and often ingenious investigators, the question of the pellagra, although conclusively treated by the erudite pen of Roussel, under the brilliant exterior of a simple and seductive theory—finally terminates, in whatever way it be considered, in the most disheartening negations. A little serum in the ventricles of the brain and spinal cord, a delicate arborization on the lobes or venous trunks; passive injection with thinning of the intestinal mucous membrane, and tenuity of the cellulo-muscular layer, but no trace of Peyer's patches, isolated follicles or ulcerations, will never sum up satisfactorily the pathological anatomy of an affection whose termination is either suicide or a slow, chronic typhoid fever, of a characteristic type, a true *typhus pellagra*, to make use of the expression of many of the native practitioners. Moreover, what are we to think of those cases, rare, to be sure, in which the disease having run an acute and rapid course, the most scrupulous autopsy reveals *absolutely nothing?* In an etiological point of view, the pretended coincidence of the appearance of the pellagra, with the introduction into Europe of an American grain, the maize, will not prove much, if we are allowed to suppose that in point of fact, the disease existed before it was described. Besides, is a connection found, as intimate as the hypothesis would compel us to suppose, between the two facts: the use of maize, and the appearance of the pellagra?

On the contrary, is it not to-day well established that this cutaneous affection is met, when maize is not at hand to account for its development; while on the other hand, it is happily unknown in certain regions where the culture of that cereal is extensively practiced? Nor has the influence of the *verderame*, a kind of blight, which is to Indian corn what ergot is to rye, been more successfully demonstrated.

As if by an excess of fatality, the pellagra, which has neither etiology nor pathological anatomy, has likewise no treatment. At Milan, as well as Brescia, they isolate pellagrous, as they used to leprous patients, in the close wards and narrow yards of the lower stories of the hospitals. But it may well be inquired, whether the baths and douches which they administer in view of certain lesions of the skin, or of the locomotive apparatus, ought really to be the last effort of a system of therapeutics, proportionate to the gravity of the disorders, of which I have only been able to give a very superficial sketch.

I have purposely cited above the considerable works, of which the pellagra has been the subject, on the part of Italian medicine. God forbid, then, that the slightest intention of reproaching our allied confrères with lukewarmness or indifference, in a matter which they have already examined so thoroughly, should be attributed to me! But, in the light of their knowledge and their patriotism, will not a disease, so balefully pernicious to their country, justify an appeal to one of those grand experiments, in which government should furnish the most powerful alteratives known to hygiene? Should not an effort be made to apply to the cure of this disease, favorable conditions akin to those which have been attended with so much advantage at the Abendberg, in Switzerland, in the removal of the cretins from the damp, dark recesses of the valleys, to the bracing atmosphere of the summits of the mountains? When the silence of analysis and of scientific investigation refuse to the inductive method a gleam of light by which to lay the foundation of a treatment, according to the dogmas of the schools, are we not permitted, dear brethren of Lombardy, to apply boldly to that other, not less fruitful source of our science, of which your great poet has said:

Esperienza,
Ch' esser suol fonte ai rivi di vostr' arte!—DANTE.

About thirty cases of tetanus occurred at Brescia after the battle of Solferino—all fatal. It is worthy of remark, that this terrible complication manifested itself almost exclusively in the churches, which had been transformed into hospitals. Independently of the

unfavorable conditions of aeration in the lower strata of the atmosphere, in consequence of the light and air entering the naves only by means of very high, narrow openings, these places are distinguished above all others by the lowness of their temperature. The operation of this cause, usually reputed as very active in the production of tetanus, was here aggravated still more, by the fatal habit which the patients had of throwing off their bed-clothes, in order the better to enjoy the treacherous coolness. There is no question that churches, while recourse must be had to them as places of shelter for the wounded for the first few hours of confusion and haste, after the sanguinary shocks of war, cannot be occupied for any length of time without great risk. At Milan, where they were able to dispense with this kind of temporary accommodation, tetanus has attacked only five or six of our men. One cure has been recorded in the service of M. Gherini; Pirogoff's amputation failed to save a second case. At Turin three cases have appeared, and as I write the one topic of conversation around me is the success which has been met in one of them by means of the *curare*, administered by Dr. Vella.

Since the beautiful experiments of M. Claude Bernard, at the College of France, the instantaneous and powerful effects which this poison produces upon the motor nervous system have become well known. M. Vella, it appears, had succeeded by the use of the same agent in subduing the contractions occasioned by strychnia poisoning in animals. From this idea to that of employing the *curare* in traumatic tetanus, there was but a single step, and this step, we are assured, has just been successfully taken.

A sergeant, having had a gunshot wound in the foot which had healed, was making his arrangements to leave the hospital, when, all at once, unequivocal signs of tetanus declared themselves, affecting the entire body and threatening asphyxia, although treated most energetically according to the usual methods.

After consultation with M. Salleson, Surgeon-in-Chief of the Military Hospitals of Turin, M. Vella laid open the wound, and wet it with a solution of a grain and a half of *curare* to ten drachms of water. At the end of three-quarters of an hour the muscular contractions had disappeared, and the patient was master of all his movements, being able to get up, to talk, and to eat and drink with ease. The symptoms reappearing the next day, were checked in the same way by application of the above-mentioned solution to the wound, and also by the endermic administration of this substance.

Six times did the disease renew its attacks, and each time they

ceased in from a half to three-quarters of an hour after the employment of the treatment. They then became less frequent, steadily diminishing in severity, until to-day the cure is complete. M. Vella will assuredly not fail to acquaint us, through the medium of the press or the Academy, with all the details of a case, the importance of whose results entitle it to be classed among the noblest discoveries of modern surgery.

I stop, my dear colleague, at this piece of good news. I have, however, still much to borrow from the notes which I make every morning in my visits to the Milan Hospital. I can perfectly understand your curiosity and that of those who will deign to read these lines, at the mention of the powder of MM. Corne and Demeaux. That is just the point at which I intend to commence my next letter. Not to disappoint you too completely, however, I will to-day simply tell you, without, be it understood, any reservation or subsequent explanation, that the powder works well. It does not *absorb*, at least so I think; it *disinfects*, perhaps. But unquestionably, either by itself or aided by other influences, it *beneficially modifies* the condition of suppurating surfaces.

MILAN, *August 10th*, 1859.

LETTER VII.

Hospital Gangrene at Milan—The Powder of MM. Corne and Demeaux—Empyema—Enterotomy—Osteitis after Amputation—Disappearance of a Projectile in the Pelvis—Consecutive Inflammation—The Tracks traversed by Balls.

To Dr. H. ZANDYCK:

My Dear Friend—An Italian sun has been pouring its most scorching rays upon us for five whole weeks, and nothing less, I assure you, than the pleasure and duty of having a word with you, could induce me at this moment to attempt to resist the oppressive and enervating heat, which so completely prostrates me. Still, the condition of the atmosphere is favorable to the yet numerous population of our hospitals. One or two cases of hospital gangrene at the *Maggiore*, five or six at *San Ambroggio*, and about twenty more among the Austrians gathered at *San Francesco*, constitute, if we except the anxiety incident to certain unusual injuries, the sole subject of medical interest at the present moment.

I have already said that *San Francesco* was an immense barrack, converted into a temporary hospital, at the time of our entry into Milan. Constructed, sixty years ago, on plans decreed by Napoleon, for the purpose of quartering an important garrison, this magnificent

edifice answers but very imperfectly, it is thought, the hygienic *desiderata* of its new character. But a similar local predisposition does not exist at *San Ambroggio*, and yet hospital gangrene has attacked six privates or non-commissioned officers, in that building. It is difficult then to assign, in this case, any other causes than those arising from a slight crowding, depression of the system from insufficiency of air or food, and in some cases, carelessness in the application or removal of dressings. I should add, too, certain moral influences.

However that may be, when, after the appeal made by the honorable Professor of the Faculty of Paris, M. Velpeau, to his colleague in the Institute, Marshal Vaillant, the topical remedy of MM. Corne and Demeaux was introduced by the Surgeon-in-Chief of the army to the notice of our French and Lombard brethren in the Milan hospitals, experiments were zealously set on foot in those wards in which it was to be feared that the disease might assume the proportions of an epidemic. The patients affected were separated and isolated. Especial precautions for ventilation, cleanliness, the removal of linen, and of the water used in dressings, &c., were enjoined. Assistant Surgeons-Major were detailed for the special duty of enforcing these orders, and at the same time directing the application of the remedy, extemporaneously prepared for the occasion, according to the suggestions of M. Velpeau, by the Central Pharmacy of the General Head-Quarters of the army. I have followed my colleague, Dr. Cuveillier, with scrupulous exactness, in the investigations which he is commissioned to make and publish, in this most interesting department of surgical therapeutics; you know already the tendency of my views on this question, from the expressions made use of at the close of my last letter. But first, let me call upon our *confrère* and friend, Dr. Martenot, of Cordova, Surgeon-Major of the first class, detailed for the treatment of the Austrian prisoners of *San Francesco*, and who has been so obliging as to furnish me the following notes:

"Experiments made under my own eyes, in very advanced cases of hospital gangrene, foreshadow the future in store for the preparation of MM. Corne and Demeaux, and the hopes which the trials which have been undertaken seem to justify, although a final decision cannot yet be pronounced upon a discovery of such importance. After employing it most faithfully for ten days, a very evident amelioration in the condition of suppurating wounds, a radical alteration in their surfaces was everywhere noticed. A few of the more stubborn still show points of ulceration, which obstinately resist every mode of treatment; but their general appearance is better, and cicatrization

is progressing visibly in those parts which have been cleansed by sloughing.

"At the commencement of the treatment, it seemed advisable to me to employ the pomade, as directed. If that did not suffice, I powdered the wound and the parts of the dressing which were in contact with it, with the pulverulent mixture. In those very extensive ulcerations which secrete an abundance of pus, it is indispensably necessary to apply thick pledgets of lint, in order to absorb the secretion and prevent the deleterious effects of its remaining on the denuded surfaces. In these cases, the dressings should be renewed two or three times in the twenty-four hours, for the reason that the suppuration, to some extent, removes the remedial agent from the surface on which it is intended to act; if this care be not taken, its action, in place of being permanent, will only prove very transient.

"When, on the contrary, as appears to me to be the rule, the wound takes on a better appearance, the dressing is modified, alternating the pomade with the powder; and as soon as it is supposed that there is no longer reason for employing the mixture of plaster and coal-tar, the customary dressing is substituted.

"Above all, in my opinion, is it necessary to insist upon local and general sanitary measures, the hygiene of the atmosphere and the food, not forgetting that of the emotional nature. . . . . "

I believe with M. Martenot in the high utility of these general elements of treatment in hospital gangrene; and I note, as having greatly contributed to its arrest among the Austrian prisoners:

1st. The removal of the wounded from *San Francesco* to the Convent of La Canonica, which opens to a great extent on the Bastion, and the fallow land which borders it, from the *Porta Orientale* to the *Porta Nuova*.

2nd. The substitution of a generous diet, roast meat and red wine, for the necessarily depressing *régime* of Italian medication, whose marked predilection for blood-letting and prolonged abstinence, in view of the dread phantom of inflammation we have already noted.

If we add, that the wounded of *San Francesco*, treated at first by the Austrian physicians, themselves prisoners, and, like their patients, a prey to the gloomy reflections of captivity; and then, after the liberation of their fellow-countrymen, intrusted at once to the care of Lombard physicians—had thus received from the beginning only the assistance of men dispirited and discouraged by defeat, and later that of their old adversaries—always objects of suspicion to the vanquished—can we fail to place a high estimate upon the favorable im-

pression made upon their moral sense, when they saw the French physicians approaching them—whom they knew to be disinterested participants in a contest in which honor alone had for the moment enlisted them, with no suppressed desire for vengeance stimulated by the rancor of national animosity?

Thus it was that, from the moment that these victims of war began to receive from French physicians—without reserve or distrust, as without painful recurrence to their recent disasters—assistance and encouragement, with a degree of attention increased by the interest felt in these new experiments by the illustrious men both of the Surgical Department and of the Army, we saw—what might easily be anticipated—their spirits returning, and their appetites, with all their functions, aroused from the profound torpor into which they were insensibly sinking. Is it astonishing that, in consequence of so complete a change in their condition, often testified by expressions of the deepest gratitude, their wounds should suddenly have assumed a better appearance? Are we necessarily compelled to attribute the entire improvement to the application of MM. Corne and Demeaux's remedy? Such, I frankly confess, is not my view of the case.

"The powder works well"—so I wrote, scarce a week since, to Dr. J. Ehrmann—"either by itself, or aided by other influences, it beneficially modifies the condition of suppurating surfaces." I leave to you, my dear friend, and to any who shall be kind enough to stop to read the preceding details, the task of determining what part of the credit belongs to the mixture and what to its important auxiliaries. As far as concerns the first, I will tell you what I have seen.

Generally, at the moment of removing the bandages, a wound which has been treated in this way exhibits a marked tendency to detersion. The diminution of pus has never seemed to be immediately perceptible, which forbids any idea of active absorption by the plaster and coal-tar. It has rather appeared to me to take place only in proportion to the progress of separation, and to keep pace with the development of those luxuriant granulations, which must always be the essential condition of a laudable and normal secretion. Up to that point, the pus, imprisoned between the wound and the cement formed by the powder or pomade on the first pieces of linen, collected so abundantly, that it poured out like fluid from a vessel, the moment that the dressing was raised.

This accumulation of pus was sometimes so painful, that the patients entreated to have the dressing renewed every hour. I saw two, who were excited to such a degree by the suffering, that they could bear

nothing whatever on their wounds. Others wept at the very thought of a fresh application of the powder, although much delighted with their first trial of it. In several cases which were thus improved at first, M. Martenot soon observed the reappearance of points of ulceration, which, so far from yielding to the treatment, seemed to tend to renewed ravages of the disease. Such was the case of a poor Austrian private, in whom the entire superior brachial region was eaten away by gangrene, so that the sheaths of the vessels could be seen, almost denuded, and threatening rupture. Death from exhaustion alone forestalled the imminent danger from hæmorrhage. During the last day or two, in another case, the femoral artery was reached by a large ulceration occupying almost the whole of Scarpa's triangle, and gave way at the time of dressing. M. Martenot was happily present, and succeeded in ligating the vessel, below the crural ring, and thus saving, temporarily at least, the life of the patient.

It is very true that the powder spread over the surface of a fœtid, putrescent wound, at once neutralizes its nauseous *sui generis* odor; but does it not act purely and simply as an impermeable coating to the orifices whence the odor is disengaged, a true and complete barrier interposed between the exhalant surfaces and the olfactory papillæ of the observer? I am led to believe that the so-called absorbent or disinfectant action on putrid gases attributed to the mixture, is limited to this, from the fact that the fœtor at once returns, if only time be given for the pus to infiltrate the pulverulent layer which, instead of destroying their origin, merely masks the emanations. Permit me now, my dear friend, a few words with regard to a number of serious or particularly remarkable cases of gunshot wounds in course of treatment in our hospitals or the infirmaries connected with them.

In the dwelling—at once an elegant mansion and a most curious museum—of the Marquis of C. B——, the Du Sommerard of Milan, a young officer of the infantry *Chasseurs*, having a penetrating wound of the chest, was seized with consecutive pleuro-pneumonia, with considerable effusion. Availing himself of the able contributions of Baudens and Ledillot, on the expediency of inducing *empyema*, Dr. Cotta performed with success an operation, the final results of which it is impossible, in the present enfeebled condition of the patient, to predict, but which at least deserves the credit of having removed the immediate danger of a fatal termination.

At the Maggiore Hospital, Professor Gherini has recently applied, without bad consequences as yet, Dupuytren's *enterotome*, in the case of a Zouave wounded at Melegnano, and having an artificial anus.

One spur of intestine has already been removed, and on the fifth day substances eaten with great care (a little chocolate) were not vomited. Defecation had begun. A second application of the screw will take place to-morrow; may it be equally successful, and thus sanction legitimate hopes for the future of the operation.

Inflammation of the ends of the bones in amputated stumps is a complication, the frequency and danger of which I have noticed too often not to give you the benefit of the reflections that it has suggested to me. The spongy portions of the bone are more subject to it than the *diaphyses* where the compact tissue predominates; at least, out of twenty cases occurring in my own practice, I can count sixteen of the leg amputated at its superior fourth, and but four of the humerus, sawed through at the surgical neck.

It does not appear to me that the manner of cicatrization or the mode of dressing have any direct influence on the production of this osteitis, as I have often seen it appear in stumps which have healed rapidly and by first intention, with fleshy and regular flaps.

Independently of the predisposition which I really think exists in a great proportion of cases in the site of the operation, I am inclined to admit a special condition of the osseous system, resulting from anterior morbid states of the economy, and attended with serious injury to it.

Such were the antecedents of, 1st, Commandant F., of the Second Regiment Zouaves, a vigorous and energetic soldier, but prematurely worn out by numerous campaigns, and repeated attacks of fever in Africa and the Crimea; this officer had had his leg amputated, with great skill, a little above the place of election, by principal Medical Director Cuveillier: 2d, a young sub-lieutenant, of Polish extraction, whose arm was amputated by Dr. Trezzi, and who, but just arrived with the foreign legion, from the southern part of the Province of Oran, was still laboring under the effects of the paludal cachexy of Algeria.

The phenomena, in these sad cases, commence and succeed each other in this order:

A slight chill, a certain degree of *malaise* usher in the scene; suddenly the wound, on the point of completely closing, puffs up, its lips become everted, and a sanious ichor trickles from it; the stump becomes hot and painful. Sleep is banished, the nervous excitement increases, even to the point of delirium. Absorption progresses the more rapidly, because in a confined locality; diarrhœa supervenes with colliquative sweats, and then a burning and continuous fever; the result may be divined without difficulty.

The most energetic remedies, mercurial frictions, free incisions, blisters, cauteries, are almost invariably of no avail.

M. G., at the *Casa Melsi*, has a circular wound in the lower abdominal region, a short distance above the symphysis of the pubis. It is corrugated from the circumference towards the centre, thus indicating the passage of a ball, but there is no symptom of intestinal injury or of peritonitis, nor in six weeks have the usual effects of the presence of a foreign body in the abdomen made their appearance. This almost led to the belief that the projectile had not entered.

Meanwhile, the wound does not heal, and gives issue from the middle of its disk to a small quantity of serous pus. At times, there is a febrile movement; the flow of urine is not always as abundant or regular as natural, and the intermissions coincide with peculiar sensations of weight about the anus. Proposing to explore the hypogastrium, I succeeded, not without some difficulty, in passing a curved metallic sound, to a considerable depth, along a nearly vertical track, back of the pubic symphysis to the level of the neck of the bladder, (?) or to the borders of the prostate. Of course I do not pretend to determine more precisely the termination of a course so imperfectly recognizable, both from its situation and from the devious and irregular path which the ball may have followed. The demonstration that we have given explains at once how the peritoneum and intestines had the good fortune to escape the dangers which so impendingly threatened them. What will finally become of the foreign body? Must we dread a pelvic abscess, or may we hope for its inclosure and encystment, or for its spontaneous exit, by means of an inflammatory process, manifesting itself towards the perineum, and to whose aid art may venture to a certain point?

At the *Casa Gonfalonieri*, Colonel L. offers an example of the consecutive phenomena which, in the case of those narrow sinuses, in the long tracks produced by balls, nearly always interfere with and impede the process of cicatrization, though begun under the most favorable circumstances. This officer had his back traversed from shoulder to shoulder by a ball, which, without involving the respiratory cavity, fractured a portion of the spine of the left scapula, and the spinous apophysis of the next to the last cervical vertebra. Scraps of bone and clothing, and a few dead fragments of the aponeuroses through which the projectile passed, have accidentally caused the formation of a deep sinus, the existence of which is revealed by the discharge of a fœtid, greenish pus, occasional rigors, and stiffness and pain in moving the head. Counter-openings were at once made, but with incom-

plete success; the remarkably valvular arrangement of the muscles of the nucha and back evidently favors the burrowing of pus in those localities. My advice was, to pass a fine seton. M. Cuveillier inclines to the introduction of a drainage-tube. This is certainly an excellent opportunity for trying the ingenious method of Professor Chassaignac.

Colonel L. has for a neighbor, Commandant S. R., of the Engineers, struck in the leg by a ball, at Melegnano, on the 8th of June—two months ago already! The bullet passed through the interosseous space, a little above the middle of the limb. The bones were not broken. The wound, not being a long one, was easily cleansed at first; but, despite five or six free incisions, suppuration continues, with a most disheartening obstinacy. The deep-seated and extreme sensibility of the part leads me to suspect an inflammatory process, or even a periosteal exfoliation of the tibia or fibula.

It is time, my dear friend, to break off this chronicle, in which I feel I forget myself with a frequency which would be irksome to an affection less indulgent and less tried than your own. Have not these studies in military surgery, towards which your earliest medical aspirations were directed, compensated for their lack of interest, by recalling to you, with some degree of emotion, the memories already distant, but still dear, of our life together with the ambulances of the army of Africa, in 1840 and 1841?

Let me hope so, and still call myself ——.

MILAN, *Aug. 15th*, 1859.

REVIEWS AND BIBLIOGRAPHY.

Selected Monographs: CZERMAK *on the Practical Uses of the Laryngoscope;* DUSCH *on Thrombosis of the Cerebral Sinuses;* SCHRŒDER VAN DER KOLK *on Atrophy of the Brain;* RADICKE *on the Application of Statistics to Medical Inquiries;* ESMARCH *on the Uses of Cold in Surgical Practice.* The New Sydenham Society. London: 1861. 8vo, pp. 329.

The five monographs here recounted may be more or less familiar already to most of our readers. The intrinsic value of each is such, that really the bare announcement of their having been translated into English, and published in one handsome volume, seems to us sufficient to insure an increasing demand for the "New Sydenham Society's" books.

CZERMAK'S essay is especially interesting, as being the first monograph on its subject ever written. It kept alive and blew into an illuminating flame the sparks previously diffused by the author and others. It greatly widened the circle of application of laryngoscopy, and led to its improvement in many directions, winning new friends and fellow-workers for this important means of exact investigation. Historically, therefore, as well as intrinsically, it is a valuable essay.

The present writer, specially devoting his attention to the diagnosis and treatment of diseases of the throat by means of the laryngoscope, will probably soon present a full article on the subject to the readers of the MONTHLY. On the present occasion, he does little more than reproduce and join together a few extracts from the work under notice, sufficient to give the reader an idea of this comparatively new Auxiliary in Medicine.

Laryngoscopy is a term employed to denote the method rendering the larynx and neighboring parts accessible to view in the living subject. The principle on which it is founded is exceedingly simple. "A small, flat mirror, with a long stem, previously warmed, to prevent its being tarnished by the breath, is introduced into the mouth, widely open, as far as its back part. It is then held up in such a manner as to permit the rays to penetrate it, on the one hand, and consequently to illuminate those parts which it is desirable to examine; and on the other hand, the image of those parts is reflected into the eye of the observer. It is understood that the objects reflected are reversed; and consequently the right vocal cord appears on the left side, in the same manner as the right hand of any person placed before a looking-glass, is found to be on the left side of the figure."

"When a person wishes to examine himself, it is requisite to employ a second flat mirror, according to Garcia, which reflects the image of the subjacent parts represented by the laryngeal mirror. This image, twice repeated, is symmetrical, according to the nature of the object; thus the right vocal cord appears to the right, and so on."

The satisfaction at beholding, in living working order, organs thus before veiled from mortal eyes, must be experienced to be understood. As to the recognition and treatment of morbid conditions, the laryngoscope deserves an honorable place among medical appliances. As might have been predicted, it has already been overvalued by a few, and undervalued by the many. It is a mistaken notion that it must take the place of other means, but it is a far greater mistake to deny

it a place, and a very prominent one, among our instrumental aids. Making all due allowances for the great tact, ability, and knowledge possibly acquired by a long experience with laryngeal diseases, with the aid of all other means of diognosis, except the laryngoscope—the difference between him who uses, and him who does not use the instrument, still is, in many affections, the difference between him who endeavors to grope his way in the gloom of the darkest night, and him who walks securely under the light of the effulgent sun. Furthermore, in local treatment, with it, *we see what we do;* it enables us to confine medication to any precise spot desired, and, more wonderful, to *remove* PER VIAS NATURALES, *morbid growths from even below the true vocal cords by means of cutting instruments, without the bloody laying open of the laryngeal cavity from without!*

Our author concludes the chapter from which we have already quoted thus: "Nevertheless, in spite of the simplicity of the principle, many obstacles and difficulties present themselves against the advantageous employment of the laryngoscope, and its correct appreciation by physiologists and physicians. Even actually notwithstanding the numerous proofs of its application, many persons become discouraged after certain fruitless attempts, as did my predecessors up to the time of Garcia.

"These difficulties and obstacles result in part from the excitability, sometimes very considerable, at the back part of the mouth, on its coming into contact with a foreign body; from the difficulty which many persons experience in opening their mouths wide enough, and of mastering the movements of the tongue; also from the conformation and unfavorable disposition of organs; and, in fine, chiefly *from the inexperience and awkwardness of the investigator.*

"The introduction of the mirror with facility and confidence, and consequently without any unusual excitement of the back part of the mouth; its prompt application to the most favorable and least sensitive spot; the habit of detecting and recognizing the reflected image, particularly of those regions but little known, and when the parts are movable; the directions to be given to the individual undergoing examination, to perform certain movements, and to assume the attitude necessary to the most favorable arrangement of the various parts of the mouth and pharynx; in fine, the regulation of the light, and of the visual direction;—all these circumstances require a degree of practice and dexterity which can be attained only by *great perseverance,* conjoined with some preliminary knowledge, and some amount of natural skill.

"These circumstances will always be very grave obstacles for the beginner, and will cause those physicians to hesitate in the employment of the laryngoscope who do not intend to make a *specialty* of laryngoscopy.

"Many other methods of examination, however, offer the same difficulties at the commencement, but these do not in the least detract from their value; as an instance, I shall here cite the ophthalmoscope, which certain persons only have learned to use with success."

Dusch's paper is a very ably drawn up account of all the cases (58) of formation of thrombi in the sinuses of the brain, which it was possible for him to collect. The first case detailed is one that had come under his own observation, and which led him to investigate the subject. The results arrived at, briefly summed up, are as follows:

Thrombosis of the sinuses of the brain is either an extension from the neighboring veins, or it originates primarily in the sinus.

A. *Thrombosis of the sinuses by extension* is the consequence,

I. Of processes of inflammation tending to necrosis, and sanies in the vascular precincts of the sinus. (These consist chiefly in caries of the bones of the skull; caries of the petrous bone, from internal ostitis, being most frequent.)

II. Of injuries of the bones of the skull; inasmuch as the hæmorrhage from the diploë which follows them leads to coagulation, (hæmorrhagic thrombosis.)

III. Of effusions of blood into the substance of the brain or its membranes, from which the thrombus extends through the smaller veins into the sinuses, (hæmorrhagic thrombosis.)

This form of thrombosis is characterized by the situation of the thrombus in the sinus (generally azygous) nearest to the cause; by the more advanced softening of the thrombus; by changes in the walls of the sinus; by inflammation in the brain and its membranes; and by metastatic processes in other organs.

B. *Thrombosis originating primarily in the sinus*, is the consequence—

1. Of influences which retard the current of the blood. In the generality of cases, several causes act simultaneously in this direction, partly of a general, partly of a local character.

1. General causes retarding the current of the blood, are—

a. Deficient energy of the heart's action.

a. In advanced age, (marasmus senilis.) Diminished elasticity of the coats of the arteries must here be taken into account as a favoring element.

β. In infancy, (marasmus infantilis.)

γ. In consequence of precedent acute or chronic diseases.

b. Diminution of the quantity of the blood. The effect of this in retarding the circulation manifests itself chiefly in the sinuses of the brain. (It is generally associated with the causes mentioned under *a.*)

a. Direct retardation from losses of blood.

β. Indirect retardation from profuse secretions, in which cases a certain allowance must be made for the inspissation of the blood, (diarrhœa and cholera infantum, profuse suppuration.)

c. Impediments to the expansion of the lungs, which prevent the right side of the heart from emptying itself properly. These impediments exist partly in the lungs themselves, (pneumonia, atalectasis, tuberculosis;) partly in the pleura, (pleuritic effusion;) or result from deficient action of the respiratory muscles, (in rickets, ascites, peritonitis.) Alone they do not appear to produce a thrombosis in the sinuses, but they must be regarded as very powerful auxiliaries.

The thrombosis which results from the causes mentioned under B, I, 1, acting, for the most part, in combination, (thrombosis from marasmus,) is characterized by the situation of the thrombus most frequently in one of the azygous sinuses, (the superior longitudinal or straight sinus;) by its firmness; by the non-existence of disease in the walls of the sinus; by consecutive hæmorrhages in the brain and its membranes; and by the absence or very unfrequent occurrence of metastatic processes in other organs.

2. Local causes which retard the circulation in the sinuses, are—

a. Pressure upon the sinus itself by tumors and enlarged Pacchionian glands.

b. Pressure upon the large veins of the neck by tumors, in consequence of which coagulation occurs first in them, and by extension of the thrombus, also in the sinuses. (*This comes, properly speaking, under* A.)

c. Intrusion of foreign bodies and tumors into the sinus, which diminish its calibre; here contact of the blood with the foreign body must be taken into account as favoring coagulation.

II. Of disease of the walls of the sinus, from altered molecular attraction between the diseased walls and the blood, especially in inflammatory processes in the former.(?)

Schrœder Van der Kolb relates, and comments upon, an exceedingly interesting case of atrophy of the left hemisphere of the brain, with coexistent atrophy of the right side of the body: we call this

case exceedingly interesting, on account of the accuracy and minuteness of the post-mortem examination and analysis of the question as to the influence of the brain and spinal cord not only upon sensation and motion, but particularly also upon nutrition, growth and functional activity of the rest of the body. The case is illustrated with four lithographed plates.

RADICKE'S paper claims authority "in stemming the stream of baseless, and, to a great extent, erroneous, doctrines which daily threaten to overwhelm medical science." The author proposes, "as one who is acquainted with mathematics and physics, to whose province the treatment of questions of this kind belongs, to provide medical men with a ready test by which they may themselves try the accuracy of the conclusions at which they may arrive." The defect in the processes hitherto employed in the investigations respecting the metamorphosis of tissue and other physiological and medical inquiries consists, according to him, in the want of a clear perception of the import and value of Arithmetic Means, and, as a consequence, in attributing to them an importance which, in applications of this kind, they do not really possess. He admits he cannot promise to give an absolutely unvarying and accurate test, since such does not, and probably never can, exist; but he furnishes a test which he himself considers a sufficient one in investigations of this kind; one on which his requirements are based, and which is to enable even "medical readers not proficient in mathematics to deal with any observations in such a manner as to obtain certain results." He commences with treating of Means or Average Values in general, lucidly explains the distinctions between arithmetic, geometric, harmonic, and quadratic Means, and, returning to Arithmetic Means as those which interest us most, discusses in full detail whether and to what extent they exhibit what, in the cases under consideration, they ought to represent, and how far they are applicable to the comparison for which they are employed. So far as the cases are concerned in which the Arithmetic Means may be employed, this latter may represent either a pure average, or the probable value of a definite and fixed quantity, or the probable value of a variable quantity estimated in its mean condition. In the first case we have to do with *several* numbers of *definite* value; the numbers from which the Mean is deduced are regarded as exact, and are either independent of one another, or their dependence, if such exist, is not taken into consideration. In the second case, only a *single* number is involved, which has to be determined from several which are of *indefinite*

value; here the conjectural reliability of the mean value depends upon the two circumstances, (1) that in each of the different numbers the error in one direction does not probably exceed that in the other, and (2) that the numbers are sufficiently numerous. In the third case, we have the same conditions as in the second, with the exception that the single number to be determined indicates, not a definite, fixed quantity, but a *variable* one. Now, medical investigations deal with Means belonging chiefly to the third category; hence it is requisite accurately to appreciate the degree of uncertainty or fluctuation of the individual numbers obtained, and to estimate the probable value of the Mean with reference to that degree of uncertainty. For this purpose, the following rules are given as applicable: The Mean required is obtained by taking the certain figures which a consideration of the "Successive Means" present, and by adding to them as the succeeding figure the Arithmetic Mean of the first uncertain figures, taken from an aggregate of so many of the last successive means as the given case shows to be desirable. The greatest divergence in the numbers of this aggregate from the mean found is *the measure of uncertainty.* If we have to compare the means of numerous complete series of observations of variable quantities, we are then only justified in concluding that an increase has occurred on one side, if the difference of the means is greater than the double of the greatest error of observation; *i. e., if it is greater than the sum of the uncertainties of these Means.* In the cases in which the mean difference is less than the sum of the mean fluctuations, but greater than its half, the result which the mean numbers give should be assumed to be "conditionally reliable," though its employment should be suspended until other investigations, undertaken with the view of ascertaining the same point, shall have given concordant results of at least equal reliability.

This paper has been sharply attacked—at the same time that its scope is warmly commended—by several eminent medical observers.

The two main objections made are as follows:

(1.) Says Dr. Beneke: "I must, at the outset, call in question the competency of mathematicians and physicists as authoritative critics of medical and physiologico-chemical matters, unless they are themselves to a certain extent physiologists." And again: "It is possible—and I wish and hope that it may be so—that the advice of Prof. Radicke may be the means of communicating to our results a greater accuracy than they have hitherto often had, and that they may obviate hasty and decided generalizations. But I also think that the physiologist as well as the medical man will look upon all the nu-

merical values connected with these investigations as only approximately correct, and that the most careful estimate of probabilities will not rectify the numbers if proper physiological considerations have been deficient, or if careful manipulation and processes were not adopted in obtaining them. The valuation of the numbers—the determination of their arithmetic mean—must also always precede the examination of them which the experimenter should make; and it is requisite that the experimenter, as well as every one who attempts to criticise them, should possess sufficient acquaintance with physiology in order to estimate them at their absolute value, as well as to test the greater or lesser probability of accuracy which they possess. The mathematician, as such, cannot do this, and however accurately he may determine the mean of a given series of numbers, he works with quantities he himself cannot estimate; and he may in the end evolve a result as mathematically correct, which is probably altogether false, in consequence of its being founded upon individual observations which are faulty."

(2.) Prof. Vierordt argues, "that in addition to the purely formal and mathematically convincing logic of the calculus of probabilities, there is, *in many cases*, a logic of facts, which, when applied in the proper manner and in the proper place, (*i. e.*, to questions that are not too complex,) carries with it, for the man who is acquainted with his subject, a small, or it may be, a very high degree of conviction."

To both of these objections, and to others, Radicke has replied, he justifies the stringency of his rules with the necessity that he feels of a *rather high degree of certainty*, "because such large superstructures are erected on physiological and pharmacological conclusions; and because new theories, or perhaps new methods of treatment, may be founded upon these conclusions, whose effect, both upon science and practice, is restricted in proportion as those theories are considered to be well founded, whilst it is too easily forgotten that they are based upon data that are only more or less *probable*, rather than *certain*."

In our opinion, these rules are by no means free from objections which constitute, perhaps, insurmountable obstacles in the way of their practical application in the cases most requiring them, but their study is so instructive that we cannot too earnestly recommend to our readers to study them in greater detail than we have been able to present them. We regard feasible attempts to "mathematicize"—if we may be allowed such an expression—medical inquiries, and thereby to render medical science more exact, as exceedingly desirable; and also agree with Dr. Bond, the translator of Radicke's Essay, in

considering statistics a most effective instrument of research when rightly used; but like other edged tools in unskillful hands, they are as likely to do hurt as good.

Esmarch, believing that of all remedies at our command in the treatment of inflammatory processes, cold is the most important, avows that without this remedy he "would rather not be a surgeon."

The chief modes of applying cold in medical practice are by compresses, immersions, affusions and bladders or bags of ice. By means of the latter only are we enabled to apply cold exclusively, as in the others the effects of moisture are always superadded. Cold compresses are the least to the purpose, and the most uncertain; when used at all, they should be carefully superintended. Very much more effective, and in many cases well answering the purpose, are cold local baths (immersion) and affusions with cold water, (irrigations.) But we attain our object of abstracting heat from an inflamed part in a far more secure way, and without injurious secondary effects, by applying dry cold, by means of water-proof receptacles filled with ice, snow, or some freezing mixture. Preferable for practical purposes to all other contrivances, are ice-bags of vulcanized India-rubber, especially the American make. A bit of lint is interposed between the bag and the surface of the body, both to keep off the moisture precipitated on the bag, and to obviate the inconvenience experienced by many from the constant contact of india-rubber with the skin. By varying the number of layers of lint, we may adapt the degree of cold to the requirements of the case. And as the bags are bad conductors, too great an abstraction of heat—with its injurious consequences—need hardly be feared. The only objection to the bag is its expensiveness.

Esmarch gives many interesting details showing the application of cold to special parts and special affections, with wood-cuts and cases in illustration. We leave the subject with our readers, convinced, as we have long been, that the systematic employment of cold is a powerful remedial agent, too much neglected. L. E.

On Military and Camp Hospitals, and the Health of Troops in the Field. Being the Results of a Commission to inspect the Sanitary Arrangements of the French Army, and incidentally of other Armies in the Crimean War. By L. Baudens, Inspector and Member of the Council of Health of the French Armies, formerly Surgeon-in-Chief, and First Professor, of the Perfecting School of Val-De-Grace, etc., etc. Translated and annotated by Franklin B. Hough, M.D., late an Inspector of the U. S. Sanitary Commission. New York: Baillière Brothers, 440 Broadway. 1862. 12mo. Pp. 260.

In our fearful struggle with the rebellion, we may derive great benefit from the experiences of other nations in recent wars. Such benefit, too, is perhaps more important and more needed in relation to the health of our soldiers than in relation to any other military matter. It is for this reason that we gladly welcome the publication of books such as the one now before us. We rejoice to be able to contribute something to its wider dissemination.

Its title-page fully expresses its nature; and the translator's preface, its purpose, viz.: "To render the results of the dearly-bought lessons of that campaign useful to the American armies in the present war for the preservation of our National Government." Dr. Hough goes on to say, that it was the painful duty of the historians of the Crimean war to record many errors and oversights, resulting in a most fearful loss of human life; that after these faults were discovered, their remedy was attempted by the medical and administrative officers of the army, with as much success as their resources allowed; and that the expedients adopted for relief, in a wild and desolate region, at a great distance from their supplies, are at once suggestive and profitable to every person who may be concerned in the health of armies. We would ask—Who among us now is not "concerned in the health of armies!" and we strongly commend the little volume to the perusal of all our readers, whether they are already in the direct military service or not.

The manner in which the translation and annotation is performed is in general satisfactory, although it might occasionally, in both particulars, easily be improved upon.

The work is divided into three Parts and an Appendix. Part I. contains, after the description of the author's voyage to the theatre of war and the medical topography of the Crimea, excellent historical and suggestive remarks in distinct chapters on the soldiers' food, shelter, and clothing. We extract the following from the author's

report, addressed, November 10th, 1855, to the French Minister of War:

"1st. *Of the Shelters.*—To the troops encamped in the forest of Baïdar, I advise the building of huts buried a yard and a half in the ground, with roofs of double slope, made of brush, covered with earth, or better still, sodded. At the bottom of the room there should be a fireplace opposite to the door, which should be constantly fed with wood from the forest, to renew the air, especially in its lower strata, to dry the walls, and to render a habitation that otherwise would generate typhoid fevers and scurvy, a warm and healthy abode. Where wood and water abound, the soldier is happy. Instead of carrying bread to the distant cantonments of Baïdar, we sent sacks of flour, which was made into bread on the ground; thus economizing the wood which came to Kamiesch from Varna. This forest, in a hygienic point of view, fulfilled expectations. The six weeks which three divisions of the first corps spent there could not have been more favorable to the health of the troops, and especially that of the recruits.

"The camps placed upon the undulating plateau of the Crimea were also in perfect health. Unfortunately, not a single tree was left; and the subterranean forest, that is, the roots of trees cut down the year before, are nearly exhausted. It is useless to think of building huts; tents must be resorted to. Where the soil was calcareous, they dug a circular pit, some two feet deep, in which the tent was placed; making a gutter around it for drawing off the rain-water. The materials taken out served to build a wall around it, about two feet high, so that the soldier, when in bed, was sheltered entirely from the wind and the rain. The shelter would have been complete had they added a fireplace, as in the officers' tents. Where the soil was not calcareous, the arrangement was sooner made, but not as good; for the circular bank, in form of a parapet made around the tent, was not to be compared with the wall of dry stones, and the ditches had to be paved, to hinder the water from filtering into the inside of the tent. It is necessary to furnish the men with either a sheepskin or a plank (biscuit boxes answer the purpose) to keep them from the ground, and a piece of oiled cloth, which they could form into a mantle, by wrapping it around them on rainy days.

"The shelter-tent is entirely insufficient for winter, and it is so short that it does not cover the feet of the men. It may be advantageously replaced by the conical tent, fashioned after those of the Turks, of all tents the warmest and strongest to resist a gale of wind.

Tents should always be set as far apart as possible, and when the weather permits, should be moved at least every four days. When the sun shines the contents should be exposed to the air, and the tents should themselves be taken down; but unfortunately, this very essential requirement is not attended to, even in the field-hospitals. It should be signaled by tap of the drum, which never fails to catch the ear of the soldier. * * * * * * *

"2d. *Of the Clothing.*—The Crimean cloak has been of great service, and it is urged that it should be furnished to all soldiers. They have nevertheless done wrong by wearing it in summer, instead of keeping it for bad weather in winter. This abuse of it renders them sensitive to the cold, and exposes them to the effects of vicissitudes. The flannel girdle is indispensable, in preventing and checking the diarrhœas that are so common, and that so often run into dysenteries and other very serious maladies. It should be applied in direct contact with the body. Our old soldiers know its usefulness, but it is not easy to make the recruits wear it. I invoke, for the enforcement of this regulation, the vigilance of all commanding officers and regimental physicians.

"In winter, we distribute to the troops another half blanket, to be used with that given them for summer use. This blanket loads down the soldier on the march. When it becomes damp, as it does by the first rain, it can hardly be said to get thoroughly dry the whole winter. I am convinced it could be profitably replaced by a red woolen shirt, like that worn by the English. A woolen shirt keeps up a pleasant and uniform warmth. Every man should have two, which, at 75 cents each, would amount to $1.50, or the price of one blanket. The men would be less loaded, and they would have next to the skin a warm, dry, and perfectly healthy garment. Flannel shirts ought to come into general use in our infirmaries and field-hospitals, where they would prevent and cure many diseases.

"The wooden shoes, which our soldiers use as a change for their wet shoes, are indispensable in a country where the ground is trampled up to a considerable depth; and during the last winter, the men, whose shoes were frozen hard for many days, could not have gone out, had it not been for these wooden shoes. Socks are very useful, and not only supply an indispensable outfit for walking in wood, but are also of precious use during the night, in keeping the feet from freezing. It might be difficult to supply them for the whole army, but General Bazaine has assured me that in every company there may be found men who will knit them for their comrades, for a very moderate price.

Besides, with some of those ingenious machines, of which models were shown at the great Paris Exhibition of 1855, we might be readily supplied.

"3d. *Of the Food.*—We cannot too highly praise the department of subsistence for having so happily solved the difficult problem of provisioning an army eight hundred leagues from France; and at no other period in our military history has the daily issue of rations been made with more regularity. It did not fail a single day, and the alternation of fresh bread and biscuit, of coffee, wine, and brandy, and of fresh meat, preserved meat, and lard, was conducted with facility, breaking the uniformity of food, and resulting in general health.

"The supplies most needed were fresh vegetables, and to this want, as well as to the cold and damp habitations, and to sleepless nights spent in the trenches, was to be ascribed the scurvy, which so seriously embarrassed the army. To supply the want of fresh vegetables an abundance of preserved mixed vegetables should be provided, sourkrout, potatoes, and onions; they are the best for the soldier's use. Seeds for sowing culinary gardens, and especially radish seeds, should be distributed to the companies; and it would be desirable to supply the mess with condiments, such as cloves, long pepper, nutmegs, and laurel leaves. Thyme abounds here, and I advise its use in seasoning soups. Cargoes of oranges and lemons, sent to the Crimea, will be necessary in treating, and even in preventing, scorbutic affections. Of vegetable acids the army of the East had long been deprived."

In one of the answers to his report, the "Intendant-General of the Army" wrote to the author: "I observe, with pleasure, that most of the hygienic measures advised by you have been executed, and we have gone even further, than you require, in regard to clothing. You seem to regard it as difficult to furnish the whole army with socks, but I am happy to inform you that in the coming winter every soldier will have, not only a pair of socks, but likewise a pair of woolen stockings, and a pair of long gaiters."

The author adds the following remarks: "It will be seen that my hygienic views agreed entirely with the plans of the Intendant-General of the Army. The result of these studies will show that my *medical and surgical suggestions were also uniformly sanctioned by the Minister of War, and by the Marshal commanding in the East.* [The italicizing is ours, but even without this, comparison with this country readily suggests itself to the reader.] We can never form too high an estimate of the services which medical science can render to an army in

the field, and of the influence that it may exert upon the vicissitudes of war. Its counsels, which are not always asked or heard until suffering and death make us cruelly feel their value, might have saved many a man who has lost or imperiled by imprudence a life of which the nation had need. The preservation of the soldier, sent out at great expense, is the first thing of interest to a people who may be conducting a foreign war, and it is the first pledge of success. Diseases slay more men than steel and powder, and it is often easy to prevent them, by a few simple hygienic precautions."

Part II. treats of the infirmaries and ambulances of the trenches, and the field hospitals; with instructive examples of medical and surgical practice.

Part III. is devoted to the regular hospitals, placed beyond the actual seat of war, to receive the sick requiring long and careful treatment. This division of the volume the author introduces thus: It was not against the Russian arms alone that the allied troops of the Crimea were forced to struggle. Those acquainted with the history of long campaigns are aware that accidental or endemic diseases commit greater ravages among soldiers than gunpowder and the sword. Besides the hygienic precautions necessary to preserve those in health, and the care demanded by the wounded, the wants of the sick and convalescent press incessantly upon the military administration the most painful problems of medical science. If we review the history of our hospital establishments during the war in the East, this fact will be shown; and I trust that the administration and science will never cease from their exertions, until these problems, which are the highest aim of their double task, are solved.

The individual Chapters of Part III. are headed: 1. The Cholera; 2. The Hospitals at Constantinople; 3. The Scurvy and Typhus; especially giving a detailed and thrilling account of "Typhus in the Crimea;" 4. The Return of the Army.

We reiterate our recommendations of this complete yet brief medical history of the Crimean War, regarding, as we do, its publication as of great service at this time. The Messrs. Baillière have performed their part well. L. E.

EDITORIAL AND MISCELLANEOUS.

—We notice with great pleasure the vigorous manner in which the New York County Medical Society is entering upon its new year. We have always felt that the legal recognition of its existence, the legislative protection which it enjoys, and the fact that it is the only Medical Society in New York City which has a right to send delegates to the State Society, entitled it to the hearty support of the profession. Our legislators are slow enough to recognize the importance of sustaining legitimate medicine, and when they take so important an initiative as this, we ought surely to be willing to meet them half way.

The Anniversary Meeting of this Society took place on Monday, October 6th, 1862, at the College of Physicians and Surgeons, H. D. Bulkley, M.D., President, in the chair.

The reading of the minutes of the Comitia Minora for the past year, and of the reguiar monthly and annual Reports of the different Standing Committees, having been disposed of, the election of officers, Censors, and Delegates for the ensuing year took place, with the following result:

Alfred Underhill, M.D., President; Chas. Henschel, M.D., Vice-President; Guido Furman, M.D., Recording Secretary; Henry S. Downs, M.D., Corresponding Secretary; S. T. Hubbard, M.D., Treasurer; Wm. N. Blakeman, M.D., Thos. C. Finnell, M.D., Wm. H. Thomson, M.D., I. E. Taylor, M.D., G. F. Woodward, M.D., Censors.

The following named gentlemen were elected as Delegates for four years to the State Medical Society, commencing February, 1863: Doctors H. D. Bulkley, H. S. Downs, Chas. Henschel, Alf. Underhill, Wm. H. Thomson, S. T. Hubbard, S. A. Purdy, J. R. Van Kleeck, Wm. N. Blakeman, John Shanks, J. O. Pond, J. B. McEwen, J. P. Loines, A. S. Purdy, J. J. Connolly, G. F. Woodward, and Guido Furman.

At a Stated Meeting of the same Society, held on Monday evening, November 3d, 1862, at the College of Physicians and Surgeons, the minutes of the last meeting having been read and adopted, the newly-elected President, Dr. Underhill, delivered his inaugural address. The following gentlemen were appointed by the Chair to fill the respective Standing Committees of the Society:

Committee on Diseases—Drs. Bulkley, Van Kleeck, Finnell, Thomson, and Raphael.

Committee on Intelligence—Drs. Taylor, Garrish, Adams, H. S. Smith, and Thorne.

Meteorological Committee—Drs. Loines, Drake, and Foster.

Library Committee—Drs. Downs, Steele, and S. P. White.

Finance Committee—Drs. Blakeman, O. White, and Blois.

Dr. Thomson continued the reading of his paper on "Medical Observations in the Inspection of 9,000 Recruits." It being composed chiefly of statistics, no proper abstract can be given.

—We bespeak for Dr. Davis's article in our present number a careful reading and consideration, for it is only on reflection that those to whom the principles which it maintains are for the first time presented will see their full force and appreciate their importance, as

forming the basis of an entirely new and scientific mode of treatment of a class of cases which have heretofore been only an opprobrium. It is useless to say as some cynics in the profession do, "There is nothing new in all this; we have known long ago that pressure would produce ulceration and absorption." The knowledge was not practically applied in this particular direction, and it is the practical application of knowledge to work out a certain definite result which constitutes the essence of discovery.

We have recently had the pleasure of examining Dr. Davis's *last* invention, in the way of a splint, for *his mode* of treating morbus coxarius and white swelling, and can say that we do not see how any further improvement can be made, for it seems to be all that can be desired as to elegance, simplicity, durability, and adaptedness. It is *very light*, and each instrument admits of so great a variation in its length as to render two sizes sufficient for all ordinary cases.

Dr. D. has been so particular in their construction as to have machines made for the formation of each part, that they may be all alike and as perfect as possible. We would advise our medical friends who may be in want of splints to obtain this.

The doctor has recently opened, at 210 Madison Avenue, a commodious and elegant establishment or Institute for the accommodation of his patients from abroad, where they can be under his immediate supervision. The profession and public owe the doctor a debt of gratitude for what he has done in his department, particularly the almost entire relief which his treatment gives in two diseases which occasion so much suffering, viz., morbus coxarius and white swelling.

The doctor has also invented an important improvement upon the crutch; he terms it "an adjustable handle." It can be applied to the single staff or ordinary crutch, and enables the individual to support most of his weight upon his hands, and this without the top of the crutch pressing against either the body or arm, the hand is so directly over the bottom of the crutch. The relative position of the arm to the staff of the crutch is such, that the top of the crutch is not pinched between the arm and the body. The doctor's patients who have used them prefer them to the double cane-crutch, that costs four times as much.

— We have to notice the death, on the 11th ultimo, of Dr. John C. Cheesman, M.D., who for half a century past has been a respected practitioner in this city. He was for thirty-five years a member of the Board of Trustees of the College of Physicians and Surgeons, and for a long period Surgeon to the New York Hospital.